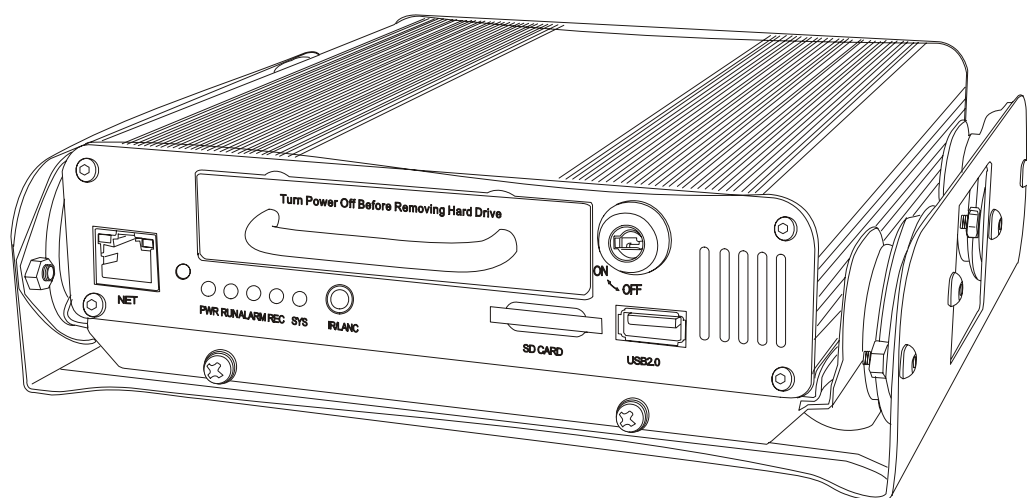


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# Mobile HDD Video Recorder

## User's Manual Installation Manual

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Thank you for using our Mobile HDD Video Recorder. This manual is applicable for 1CH, 2CH and 4 CH Mobile HDD Video Recorder, Please read this User's Manual carefully to ensure that you can use the device correctly and safely. The contents of this manual are subject to be changed without notice.

---

## Warning

This device is **NOT** of waterproof; to prevent it from any accident of fire or electric shock, please do **NOT** put any container with water on the device or nearby. Do not expose the device to moisture, or extreme temperatures.



This lightning flash with arrow symbol within an equilateral triangle is intended to alert users that there might be uninsulated dangerous voltage which may cause

### CAUTION

**RISK OF ELECTRIC SHOCK**  
**DO NOT OPEN**

To prevent from the risk of electric shock, do **NOT** remove top cover or back cover. There is **NO** user-serviceable part inside. Ask for service from qualified maintenance man.



The exclamation point within an equilateral triangle is intended to alert users the important operating and maintenance(servicing) instructions in this manual.



### Important notice:

1. Please read over all cautions.
2. Please keep this manual for reference in the future.
3. Please notice all warning information.
4. Please strictly follow the instructions in this manual while operating.
5. Please **NEVER** put this device under the place which is easily poured by water.
6. Please do **NOT** use abrasive chemicals, cleaning solvents or strong detergents to clean the device. Wipe the device with a soft and dry cloth.
7. Please do **NOT** get the gate of airiness heat exchange closed.
8. Please leave the device far away from hot and high temperature environment.
9. Install the device with the accessories coming with it.
10. Please take care when moving the device, make sure of security, and avoid being damaged by dropping from high place.
11. Call for qualified maintenance man to repair when needed.
12. The device can only be installed horizontally. Installed vertically or out of the horizontal could hurt person or damage the device or/and its parts.

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# **TABLE OF CONTENTS**

<b>1. GENERAL INTRODUCTION .....</b>	<b>5</b>
<b>2. PRODUCT FIGURES .....</b>	<b>7</b>
2.1, FRONT PANEL .....	7
2.2 REAR PANEL .....	8
2.3 WIRELESS REMOTE CONTROLLER.....	9
<b>3. USING THE RECORDER.....</b>	<b>10</b>
3.1 PREPARE THE HARD DISC.....	10
3.2 INSTALL AND FIX THE ANTI-VIBRATION MECHANICAL CONSTRUCTION .....	12
3.2.1, Use a power drill and screws supplied to fix the bottom cover of the Anti-vibration Mechanical construction in the right place inside the vehicle. ....	12
3.2.2, Insert the DVR unit inside floating bracket and fasten it with screws. ....	13
3.3 CONNECT WITH CAMERAS.....	13
3.4 POWER CONNECTION .....	14
3.4.1. Use Ignition Switch to Turn On/Off DVR System.....	14
3.4.2, Turn On / Off DVR System Automatically.....	14
3.5 SENSOR HARNESS CONNECTION .....	15
3.6 EVENT BUTTON AND CABLE CONNECTION (OPTION) .....	16
<b>4. MAIN SYSTEM OVERVIEW .....</b>	<b>17</b>
<b>5. BASIC OPERATION AND MENU SYSTEM .....</b>	<b>18</b>
5.1 HARD DISC FORMATTING .....	18
5.2 CHOOSE RECORDING MODE .....	19
5.3 FILE LENGTH.....	19
5.4 RECORDING QUALITY .....	20
5.5 START RECORDING.....	21
5.6 PLAYBACK OPTION .....	22
5.6.1 Playback files on DVR system .....	22
5.6.2 Playback the files on manufacturer's PC Playback Software.....	24
5.7, FILE BACKUP .....	24
5.8 ALARM RECORDING .....	25
5.8.1 Setup The Alarm Action.....	25
5.8.2 Post Event Record .....	26
5.9 MOTION DETECTION .....	27
5.9.1 Set Motion Detection Zone.....	27
5.9.2 Set Motion Detection Action .....	27
5.9.3 Set Motion Sensitivity.....	28
5.10 VIDEO LOST ALARM .....	28
5.11 SCHEDULE RECORDING .....	28
5.12 VIDEO SYSTEM SETTING .....	29

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5.13 SET DATE AND TIME .....	29
5.13.1 Set Date Display Format .....	29
5.13.2 Set The Time Zone .....	30
5.13.3 Set Date and Time .....	30
5.14 CONFIGURATION SETUP .....	30
5.15 USER LEVEL AND PASSWORD SETTING .....	31
5.16 NETWORK SETTING .....	32
5.17 MOTOR.....	33
5.17.1 Set "LICENSE ID" and "LINE" .....	33
5.17.2 Get Speed from GPS .....	34
5.17.3 Get Speed from Speedometer .....	36
5.18 MANAGE THE POWER.....	37
5.18.1, Use ignition switch to turn on/off the DVR system.....	37
5.18.2, Turn On / Off DVR System Automatically.....	38
5.19 USE PTZ .....	39
5.19.1 PTZ Control .....	40
5.19.2 Rename the camera .....	40
5.19.3 Video Adjustment.....	41
5.20 GPS SETTING (OPTION) .....	41
5.21 EVENT BUTTON & CABLE SETTING (OPTION).....	42
5.22 FIRMWARE UPDATE .....	44
5.23 USING WI-FI MODULE (OPTION) .....	46
 <b>6. CONNECTION &amp; INSTALLATION CABLES .....</b>	<b>49</b>
6.1 POWER SUPPLY CABLE.....	49
6.2 VIDEO & AUDIO INPUT / OUTPUT CABLE .....	49
6.3 SENSOR HARNESS .....	50
 <b>7. SPECIFICATION .....</b>	<b>52</b>
 <b>8. LIST OF STANDARD ACCESSORIES .....</b>	<b>53</b>
 <b>9. TROUBLE SHOOTING. ....</b>	<b>54</b>

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## 1. General Introduction

The Mobile HDD video recorder is a compact, full-featured recording system that uses a hard disc as a storage device. The recorder unit and associated accessories are specifically designed for operation in a mobile environment.

The Mobile HDD video record system, used in conjunction with the cameras, records up to four channels of full-motion video and audio data to a removable hard disc. The firmware-driven menu system provides a simple method for configuring the unit's operation as well as searching for and viewing previously recorded AV records.

### Regulatory Compliance

The Mobile Video Recorder complies with CE and Part 15 of the FCC interference limits for Class B digital devices FOR HOME OR OFFICE USE. These limits are designed to provide reasonable protection against harmful interference. Operation of this device is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### Product Description

The Mobile DVR unit consists of the following major components:

### Standard Components and Features

- Extruded aluminum case (the case is anodized in cobalt blue).
- Front and rear panels.
- Mother Board.
- Power, AV input and output cables.
- Power input 3 amp fuses (2).
- Tamper proof and lockable security box.
- Panel lock with (2) keys for locking the security enclosure.
- Wireless remote controller.
- Removable 2.5" hard disc.

### Optional Components and Features

- GPS speed and location data overlay.
- Wired remote cable for non line-of-sight DVR operations.
- Extension cable for easy connection and installation.

### Product Main Features

- Embedded operating system, assuring reliability and system integrity.
- Records up to four channels of full-motion color video with corresponding audio tracks.
- H.264 High Profile video compression.
- Total Record resource up to 100/120 D1 frame/second.
- Lockable security enclosure.
- Front panel USB2.0 port for recording to a flash card as an optional storage device.
- Ignition sense that provides DVR power-on in recording mode when the bus is started.
- Power-off delay record when the bus is shut-down with operator-selected delay times.

---

## **Video And Audio**

- H.264 High Profile video compression, real time recording (25 fps(PAL) / 30 fps(NTSC) for each channel. Frame rate adjustable for each channel.
- Audio compression: G.711 codec. This codec offers high compression with high quality audio.
- D1 resolution for each channel, which means each channel support 720x576(PAL)/720x480(NTSC).
- Support 4 channel real time D1 video and 4 channel audio recording.
- Local video and audio real time playback.

## **GPS Time Synchronization & Time Zone**

- Synchronize the DVR system time with GPS automatically
- Support All Time Zones Worldwide
- Support DST (Daylight Saving Time)

## **Power Management**

- Reliable power management, wide voltage: +8VDC~+32VDC; The power input is protected against short positive transient (1500 watts peak pulse power capability with a 10x1000 us waveform); The power input is protected against negative voltage. Applicable for vehicles with +12V or +24V battery.
- The recorder provides each camera with stable +12V DC power; DVR can detect the short cut on power circuit.
- Can use ignition to control the power.
- DVR can monitor battery voltage after Ignition off, and auto into sleep mode when voltage is bellow specified level.

## **Recording mode**

- Continuous record.
- Support schedule recording.
- Support alarm recording.
- Support motion detection recording.
- Support 2 recording mode, composite mode and separate mode.

## **Speed and Vehicle status recording**

- Record vehicle speed and car id with audio and video.
- Support 5 sensors, can be connected to speed, ignition, brake, return, right turn, left turn light etc.
- Over-speed alarm.
- Specified screen can be full screen displayed when return sensor triggered.

## **Double Anti-vibration Mechanical Proof For HDD**

- Patent pending anti-vibration design, full floating construction with rubber, 100% mechanical protection for HDD.
- Removable HDD box, convenient HDD collection for recorded content browse..

## **SD card**

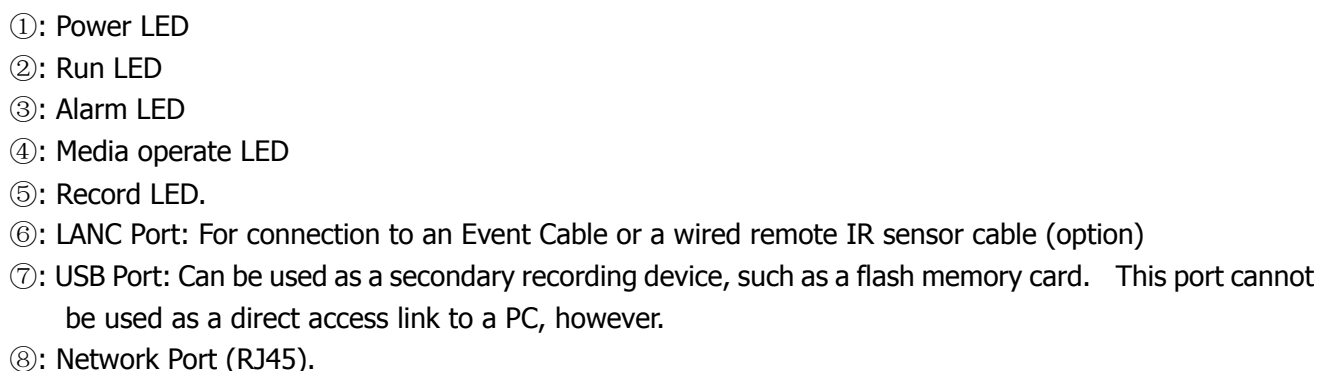
- Support SDHC card within 32GByte.
- Support SD card hot plug when not recording and playing.

## **Multiple player supported**

You may use manufacturer's PC Playback Software or any of the following third party media player to play back the record file.

- VLC media player (version1.0.0 or above);
- Storm player (Version 2009 or above);
- Winamp (Version 5.531 or above).

## 2.1, Front Panel



**Get to know the status of DVR system by the indication of LED lights:**

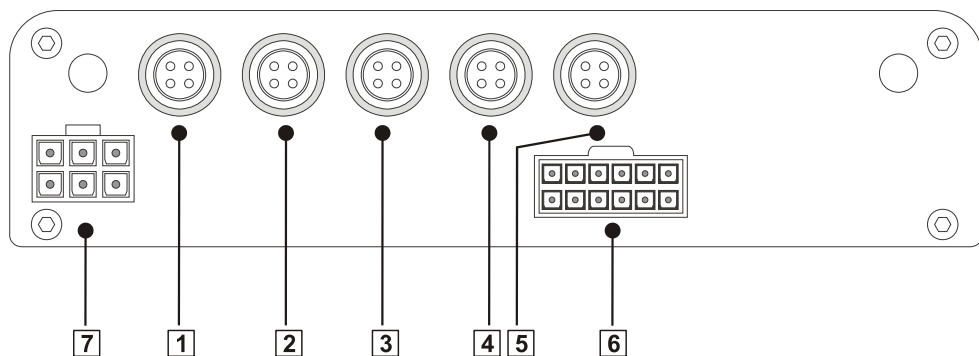
1. PWR (Green)	2. RUN (Green)	Status/Description
Always On	Blinking	DVR is on & running
Blinking with RUN by turns	Blinking with PWR by turns	Ignition is not enabled and DVR is OFF.
Blinking together with RUN	Blinking together with PWR	Ignition sense is not enabled & DVR is running. Unit will turn OFF when "Delay Time" setting is reached.
Blinking every 3 seconds	Off	Select PWR on the remote control to restart.

3. ALARM (Red)	Status/Description
On	Alarm input when BEEP is set as "ON". Audible alarm (beep) when enabled.
Off	No alarm.

4. HDD (Red)	Description
On	Writing data to the HDD. .
Off	Not writing – inactive.

5. REC (Yellow)	Description
On	Recording data.
Off	Not recording.

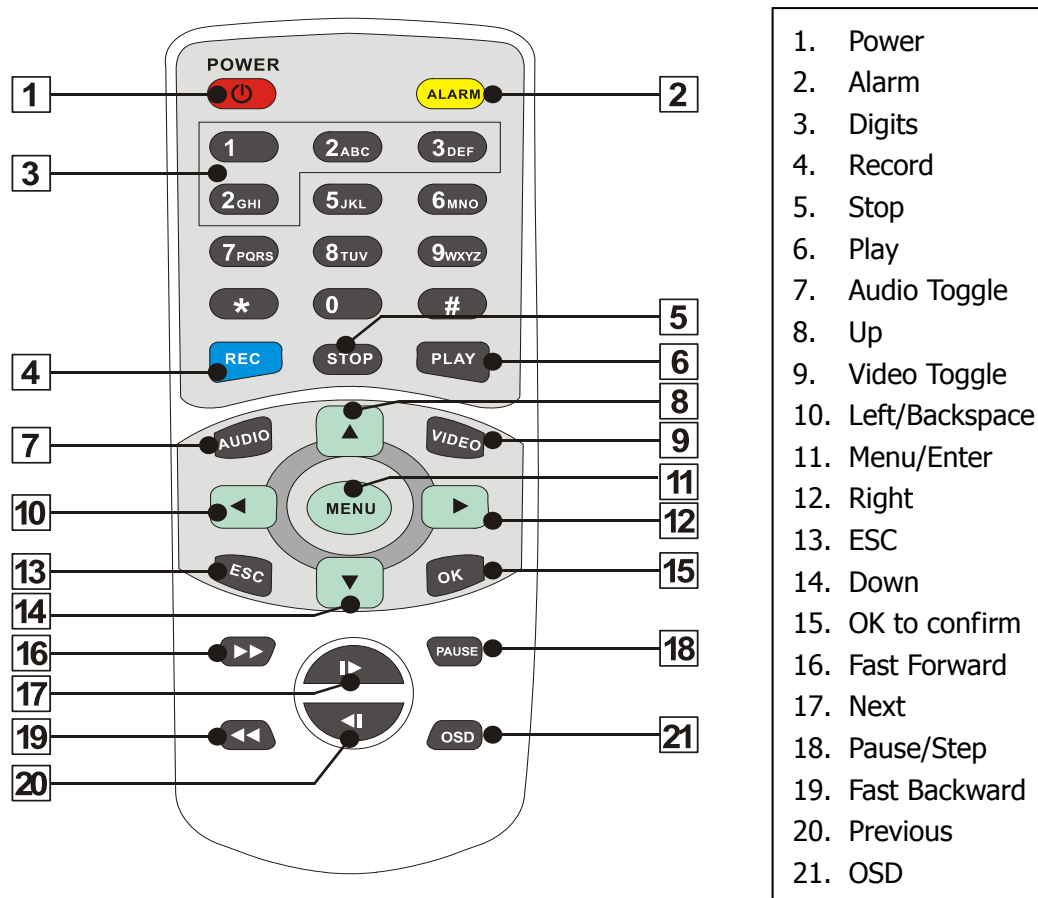
## 2.2 Rear panel



- ①: AVIN1( 4-pin male connector including audio input 1, video input 1 and power output for camera 1)
- ②: AVIN2( 4-pin male connector including audio input 2, video input 2 and power output for camera 2)
- ③: AVIN3( 4-pin male connector including audio input 3, video input 3 and power output for camera 3)
- ④: AVIN4( 4-pin male connector including audio input 4, video input 4 and power output for camera 4)
- ⑤: AVOUT( 4-pin male connector including audio output, video output and power output)
- ⑥: 1x speed sensor, 3x sensors inputs, 2x RS232 port, 1x RS485 port and 1x 5V DC output.
- ⑦: Power, Ground and ACC input.



## 2.3 Wireless Remote Controller



How to use the remote:

- 1) Press **<MENU>** to enter DVR system menu or sub menu. You can also use **<MENU>** to select among different value in the submenu. You can also use **<MENU>** as **<OK>**;
- 2) Press **<UP/DOWN/LEFT/RIGHT>** button to move between the different menu item;
- 3) Press **<OK>** to save and exit the current menu. Press **<ESC>** to cancel and exit the current menu. If you modify something in the menu, recorder will prompt a window to ask you to save or cancel your modification;
- 4) Press **<VIDEO>** to toggle among different video channel;
- 5) Press **<AUDIO>** to toggle among different audio channel;
- 6) To delete character in the edit control, you can press **<◀>**;
- 7) Press **<POWER>** for a while to turn on/off the recorder.

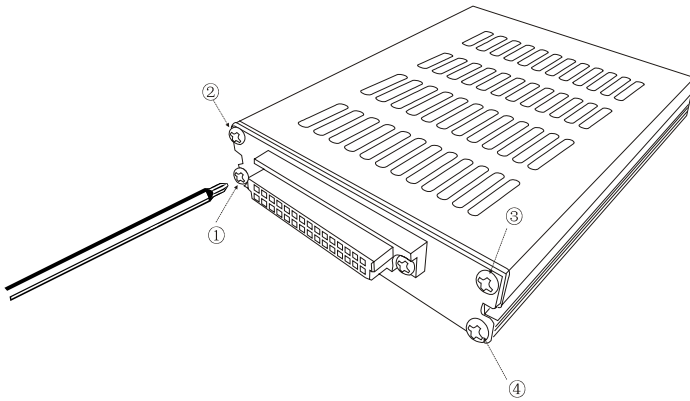
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### 3. Using the recorder

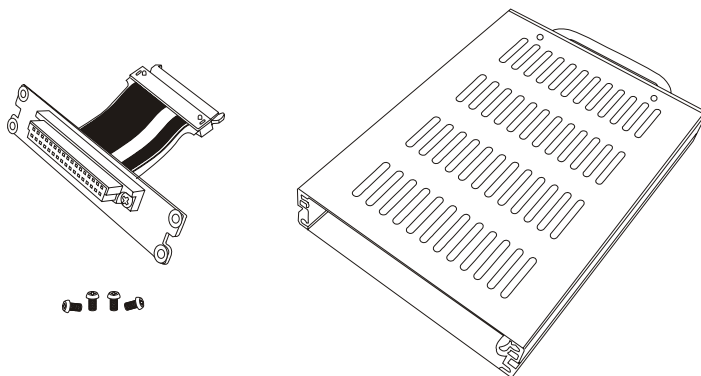
#### 3.1 Prepare the Hard Disc

Following is the procedure of Installing a 2.5" HDD

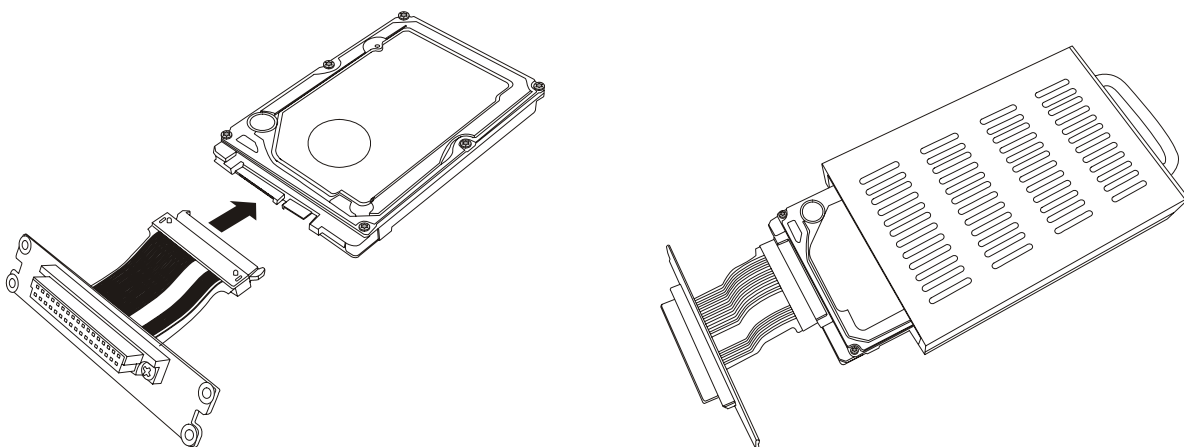
1) Loosen screws on the rear part of the Hard Disk Case.



2) Withdraw out the Hard Disk SATA interface from the case.

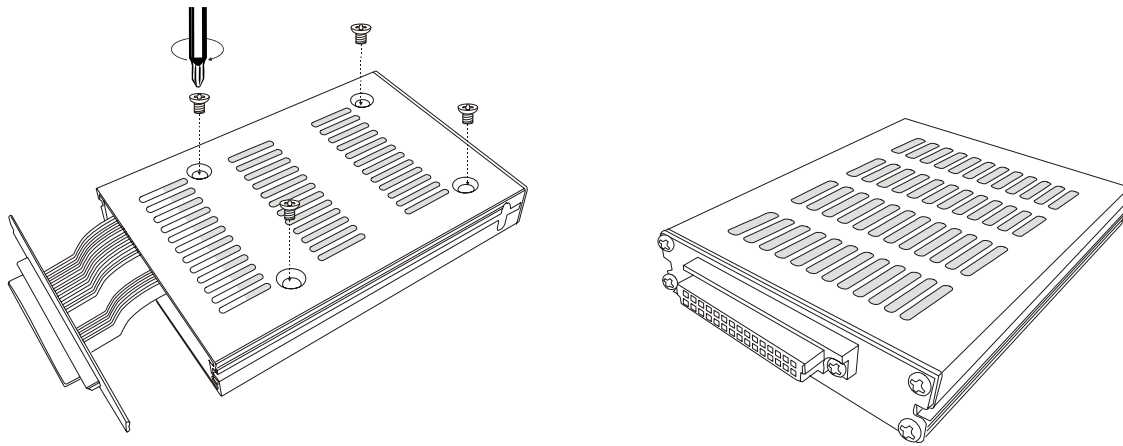


3) Connect the SATA Interface with the Hard Disk.



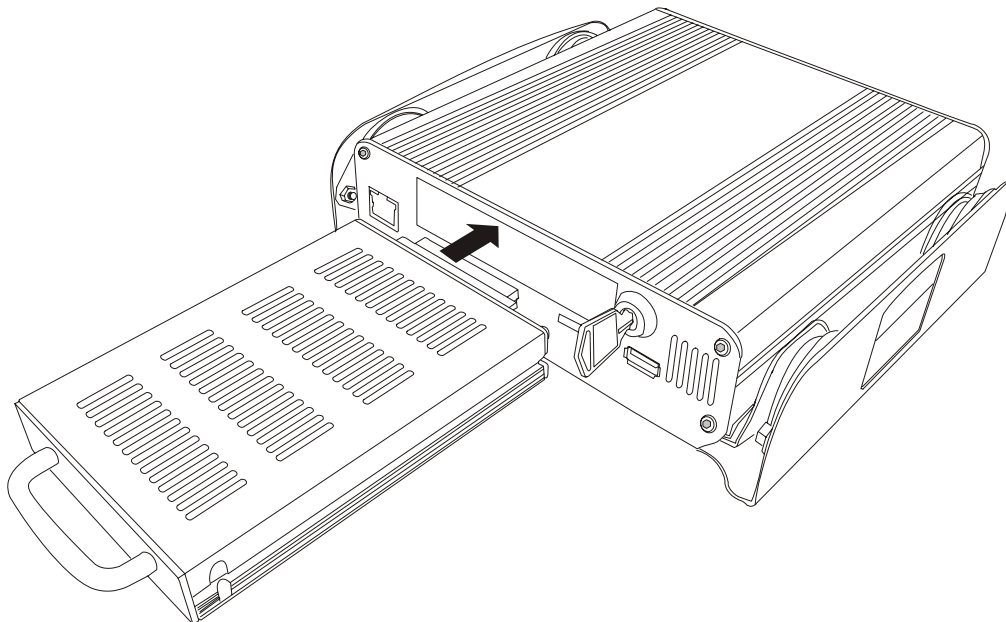
4) Put the hard drive back to the hard drive case. Please note, the hard drive should be put to the mounting bracket inside of the hard drive case.

5) Fix the Hard Disk onto the anti-vibration rack safely with screws on the case. Be noted, screws must be tightly fixed. If the hard disk has not been fixed safely, damage can be occurred during vibration, and data can be lost.



6) Fix screws back to the Hard Disk case rear part. Hard Disc installation done.

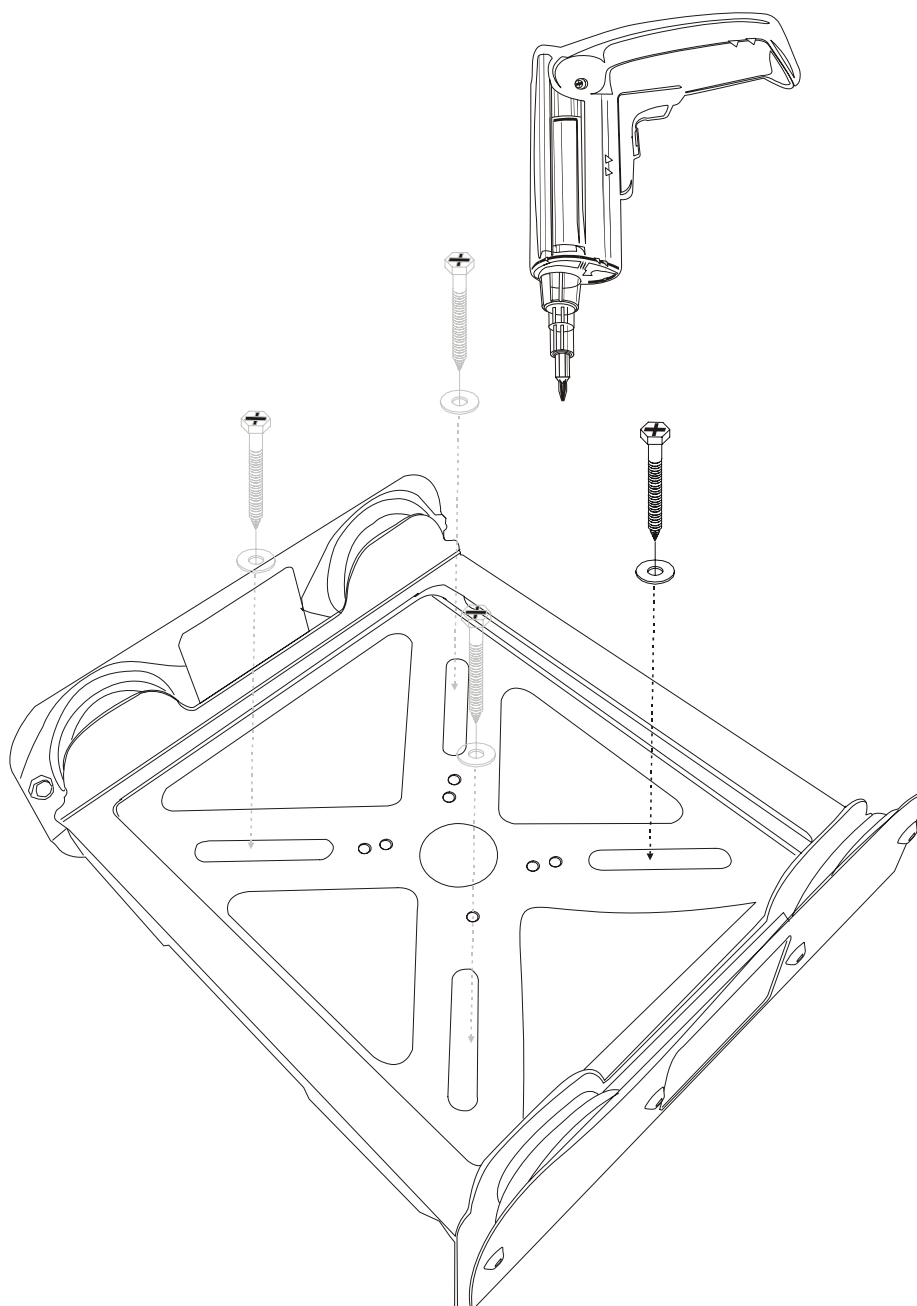
7) Insert the removable HDD box into the Mobile DVR



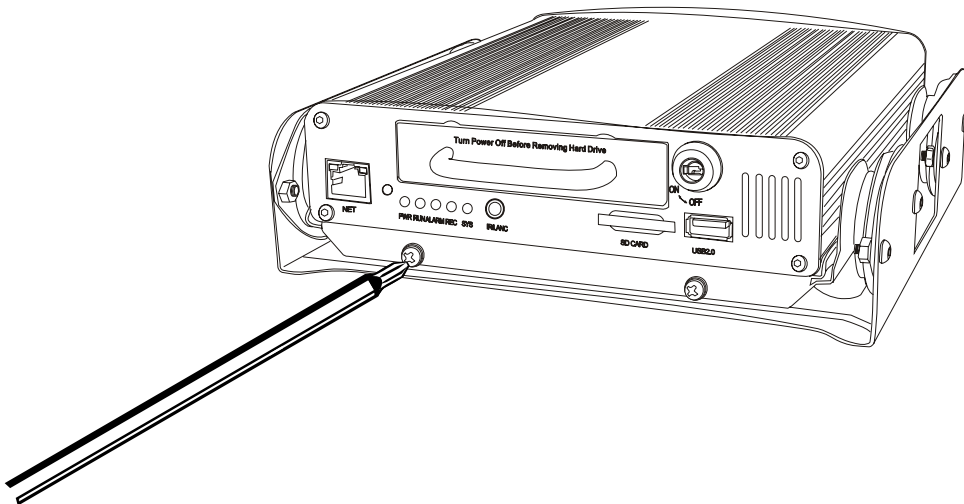
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### 3.2 Install and Fix the Anti-Vibration Mechanical construction

3.2.1, Use a power drill and screws supplied to fix the bottom cover of the Anti-vibration Mechanical construction in the right place inside the vehicle.



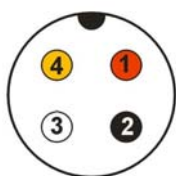
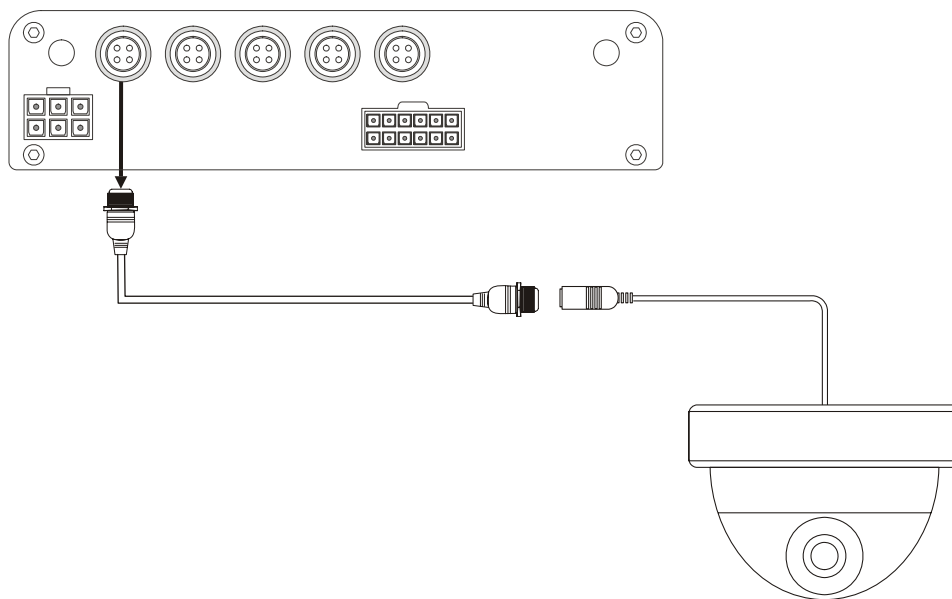
### 3.2.2, Insert the DVR unit inside floating bracket and fasten it with screws.



### 3.3 Connect with Cameras

Two different kinds of Audio&Video Cables for option:

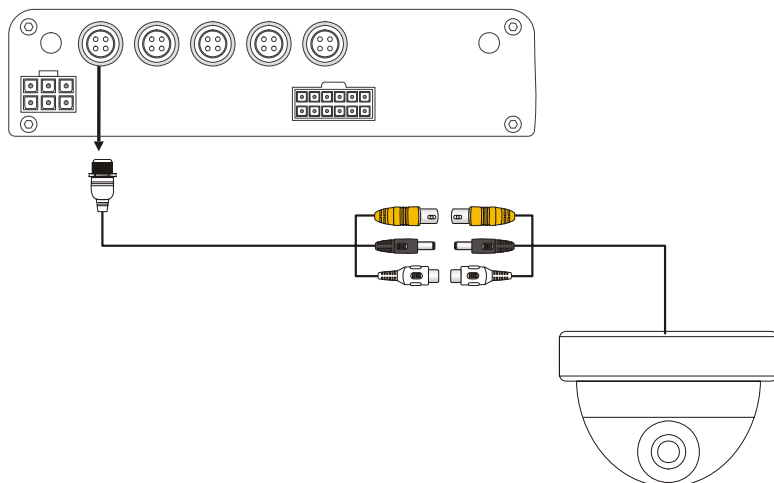
- 1) 4-pin threaded cable with male connector and extension cable (3m, 5m and 10m available) for each camera (Pin 1: 12V power, Pin 2: GND, Pin 3: Audio Input, Pin 4: Video Input):



1-POWER	-CONNECTED TO 12V
2-GROUND	-CONNECTED TO GND
3-AUDIO	-CONNECTED TO AIN
4-VIDEO	-CONNECTED TO VIN

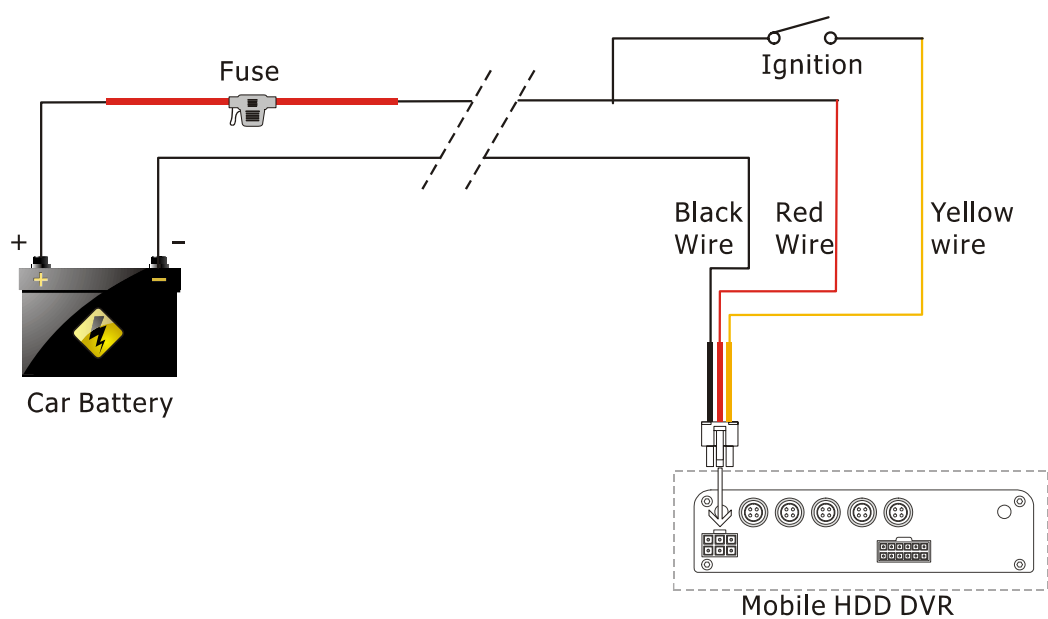
The camera should with 4-pin female connector to match this cable. The DVR unit will provide stable 12V DC power to each camera, and record video and audio (if the camera is with microphone built-in). This type of connection cable is highly recommended. It saves both installation time and cost.

- 2) AV Input cable with BNC (Video, in yellow), RCA(Audio, in white) and DC connectors for each camera:

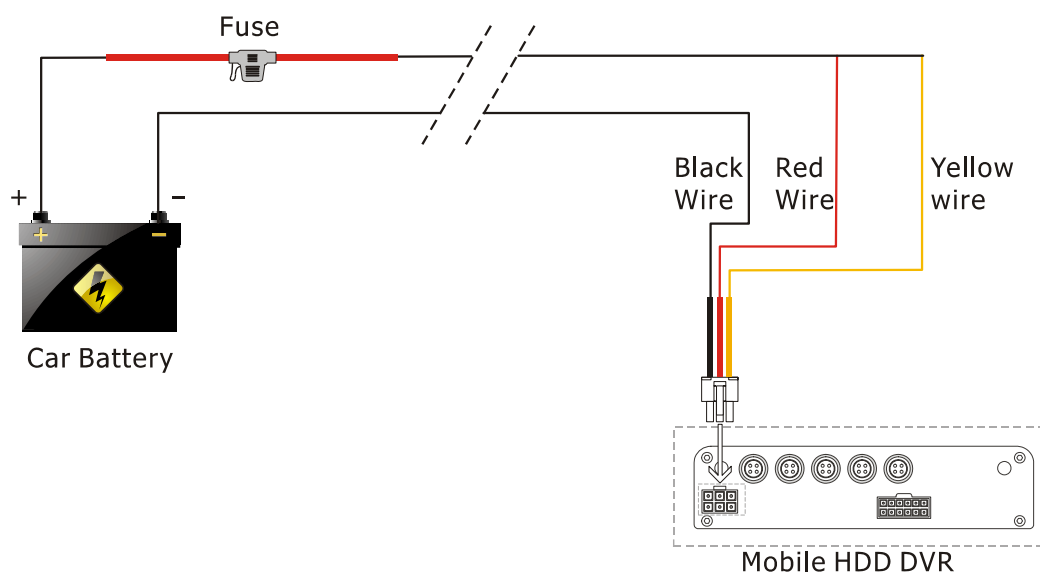


### 3.4 Power Connection

#### 3.4.1. Use Ignition Switch to Turn On/Off DVR System



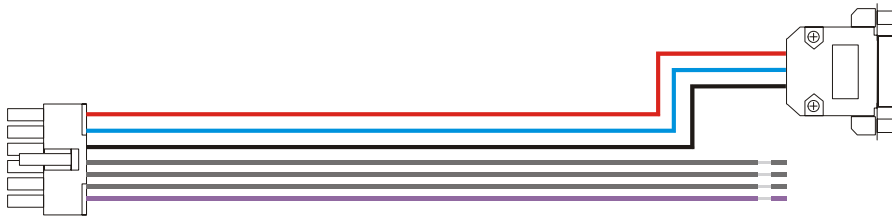
#### 3.4.2, Turn On / Off DVR System Automatically



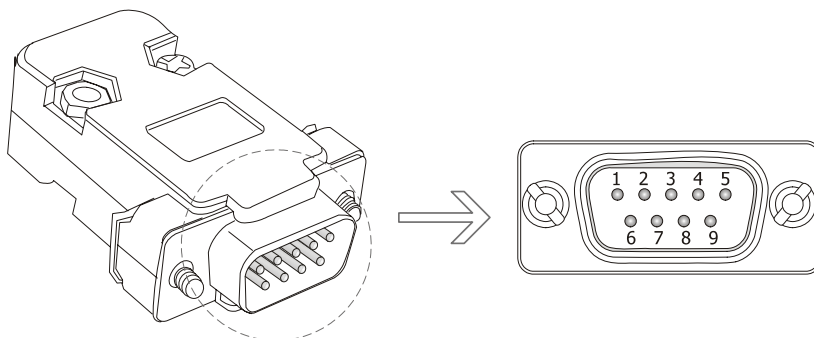
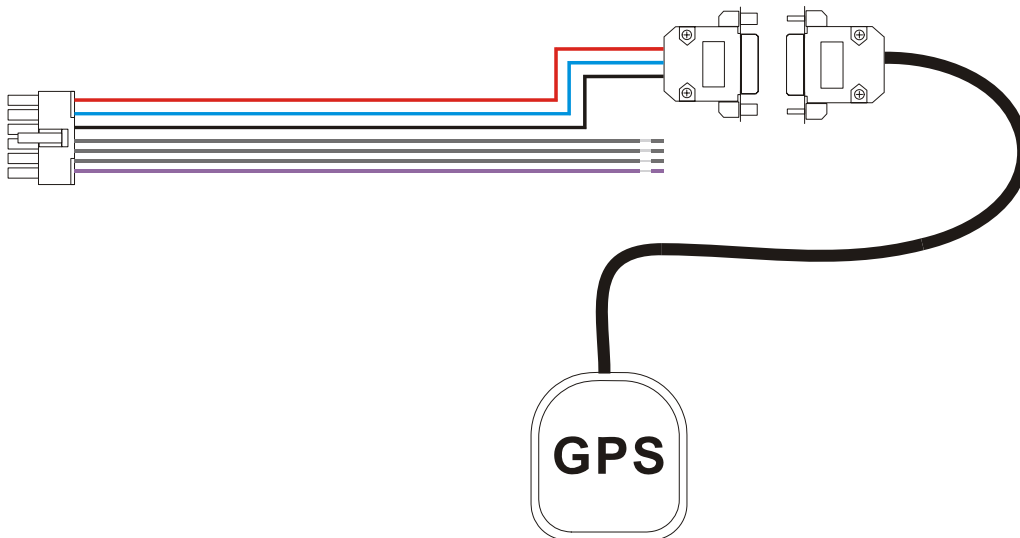
## NOTE

1. The DVR uses DC power input, please be very careful when connecting to the "+" and "-" of the power supply.
2. Wide voltage range of 8V-32V for the DVR. The DVR may be damaged if the voltage comes too high. And the DVR may not work if the voltage comes too low.
3. Power of the DVR should be supplied by the car battery.
4. Power consumption of the DVR can be 60W when the engine starts. All the cables for connecting from power to the DVR should be thick enough for current over 5 Amperes.
5. To protect the battery from being damaged of short circuit, the fuse should be placed very closed to the "+" pole of car battery.

### 3.5 Sensor Harness Connection

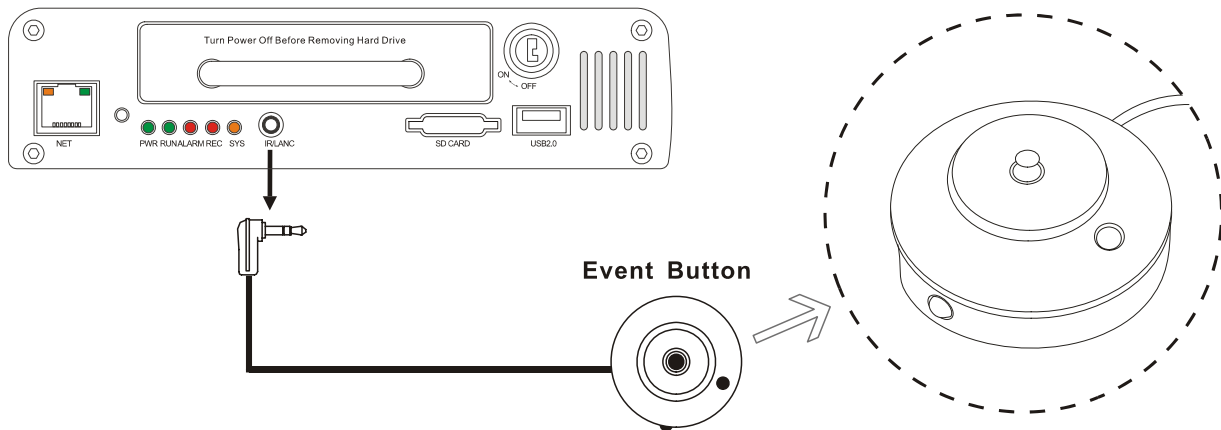
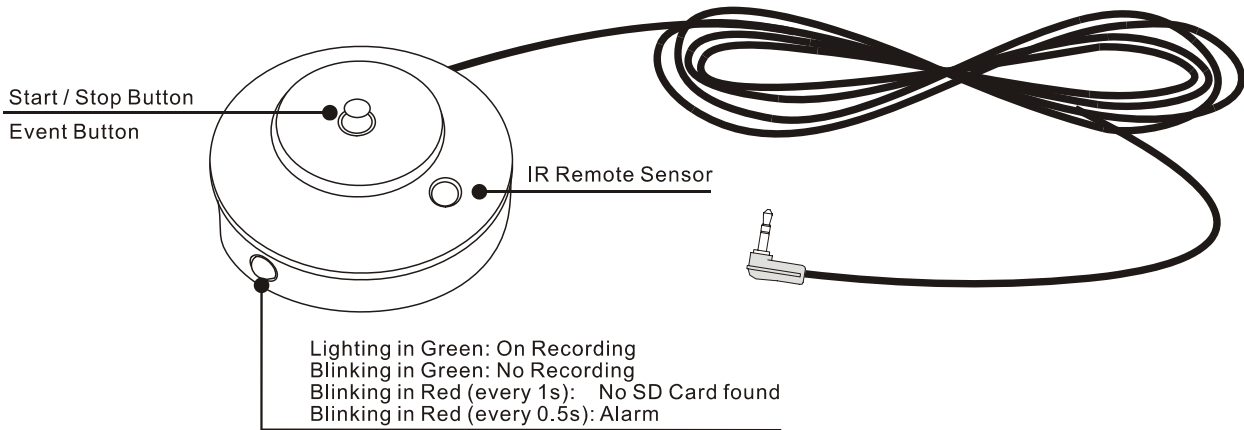


### GPS Connection (Option)



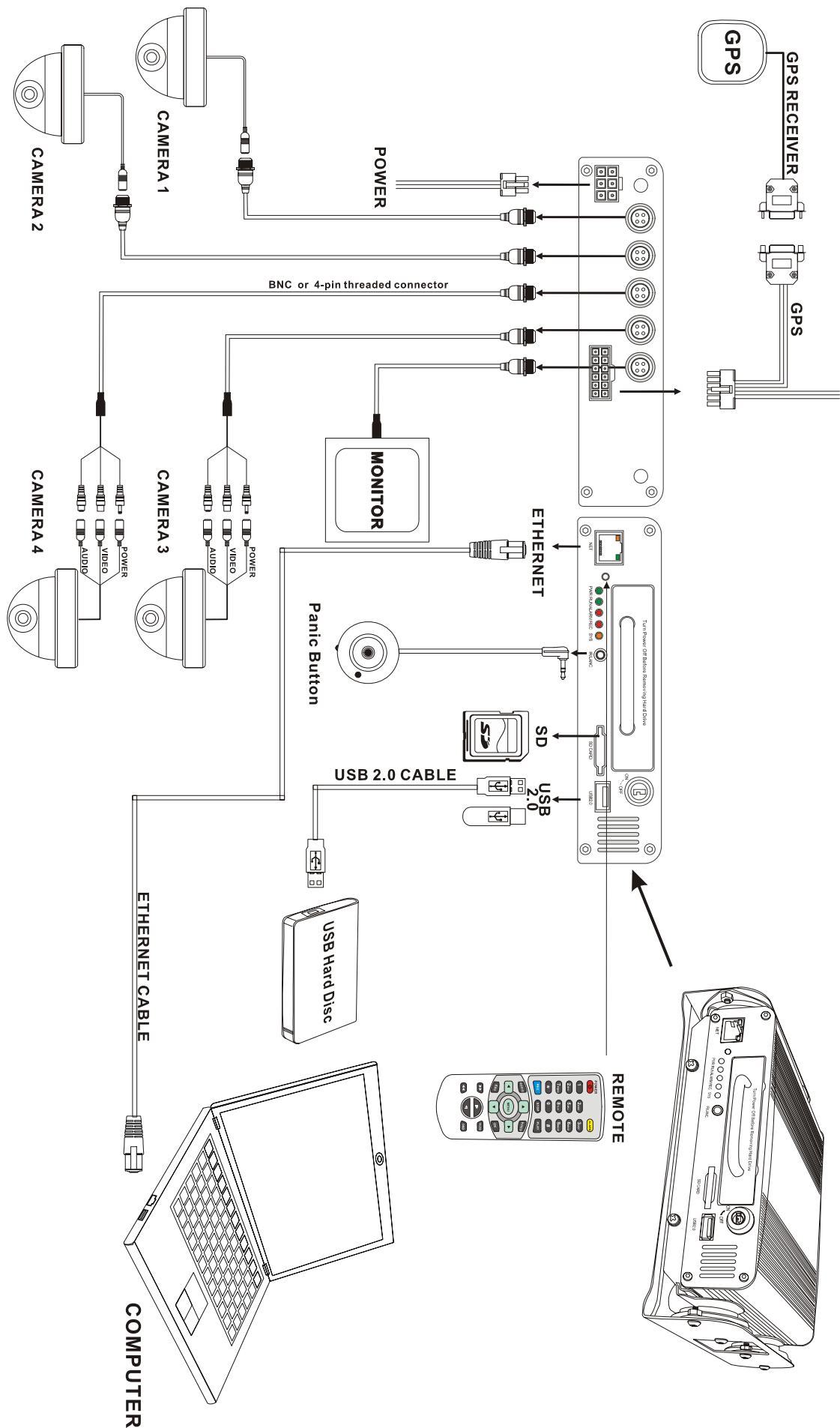
PIN	Description
3	RXD2: Data receive
5	GND: Ground
9	+5V DC: Power output

### 3.6 Event Button and Cable Connection (Option)





# 4. Main System Overview



## 5. Basic Operation and Menu System

### 5.1 Hard Disc Formatting

For a new hard disc or with situations listed below, you're required to format it before using:

- 1) If the hard disc is not FAT32 file system, such as NTFS, which will not be recognized by the DVR system. You have to format it by using FAT32 file system on your PC. "Partition Manager", which can be downloaded from internet free of charge, is recommended to be used for fast formatting and batch processing.
- 2) If the hard disc is never formatted, or the file system is corrupted, you may have to format it before using. This can be done on your PC by using FAT32 file system, or format it on the DVR system itself by following steps given below:
- 3) Insert the removable HDD box (with hard disc inside) into the Mobile DVR on front panel of the DVR system;
- 4) Press <MENU> by remote to enter the DVR system menu;



- a) Choose "STORAGE" and press <MENU> to enter its sub-menu.
- b) Go to "FORMAT" and press <MENU> to get ready for formatting.

#### STORAGE

OVERWRITE	◀ ON ▶ ⬇
FORMAT	FORMAT SELECTED DISK 📄
STORAGE DEVICE	◀ DISK 1 ▶ ⬇
TOTAL CAPACITY	7573M
FREE CAPACITY	6208M
SEARCH BY TIME	2011/04/27 15:58:39 📄

---

## STORAGE

---

OVERWRITE	<input type="checkbox"/> ON <input type="button" value="▶"/> <input type="button" value="⬇"/>
FORMAT	FORMAT SELECTED DISK <input type="button" value="📄"/>
STORAGE DEVICE	<input type="checkbox"/> DISK 1 <input type="button" value="▶"/> <input type="button" value="⬇"/>

Are you Sure to format this disk?

The format process will take some time, please wait. You will see the capacity of hard disc or SD card after formatting.

### 5.2 Choose Recording Mode

Two recording modes for option: **Composite Mode** and **Separate Mode**. The defaulted recording mode is "Separate Mode". You can change to "Composite Mode" by steps given as below if needed:

- Press <MENU> by remote;
- Choose "RECORD" to enter it sub-menu;
- Set the "CHANNEL MODE" as "COMPOSITE MODE" ;
- Press <MENU> to confirm;
- Press <ESC> to save and exit.

## RECORD

---

RECORD SETTINGS	QUALITY AUDIO... <input type="button" value="📄"/>
FILE LENGTH	<input type="checkbox"/> 5min <input type="button" value="▶"/> <input type="button" value="⬇"/>
FILE TYPE	avi
ASK WHEN STOP	<input type="checkbox"/> YES <input type="button" value="▶"/> <input type="button" value="⬇"/>
RECORD SCHEDULE	CUSTOMIZE RECORD SCHEDULE <input type="button" value="📄"/>
CHANNEL MODE	<input type="checkbox"/> SEPARATE <input type="button" value="▶"/> <input type="button" value="⬇"/>
	SEPARATE
	COMPOSITE












### 5.3 File Length

Options for file length: 5mins, 10mins, 15mins, 20mins, 30mins, 45mins and 60mins. The defaulted file length is 5 minutes. The maximum file length is 60 minutes.

---

## RECORD

---

RECORD SETTINGS	QUALITY AUDIO... 
FILE LENGTH	 5min  
FILE TYPE	avi
ASK WHEN STOP	 YES  
RECORD SCHEDULE	CUSTOMIZE RECORD SCHEDULE 
CHANNEL MODE	 SEPARATE  

### 5.4 Recording Quality

Press <MENU> to enter the DVR system menu, choose "RECORD" and enter its sub-menu, go to "RECORD SETTINGS" and press <MENU> to enter.

1) Setting Menu for Composite Mode:

CH	SIZE	QUALITY	AMERA	REC MODE	NET	AUDIO
01	D1	< GOOD >	< 25 >	< AUTO >	< OFF >	< ALL >

CH 01: About 1290M/Hour

Total Disk: About 12.0Hours

2) Setting menu for Separate Mode:

CH	SIZE	QUALITY	AMERA	REC MODE	NET	AUDIO
01	D1	◁ GOOD ▷	◁ 25 ▷	◁ AUTO ▷	◁ OFF ▷	◁ ON ▷
02	D1	◁ GOOD ▷	◁ 12 ▷	◁ AUTO ▷	◁ OFF ▷	◁ ON ▷
03	D1	◁ NORMA ▷	◁ 8 ▷	◁ AUTO ▷	◁ OFF ▷	◁ ON ▷
04	2/3D1	◁ BASIC ▷	◁ 5 ▷	◁ AUTO ▷	◁ OFF ▷	◁ ON ▷

CH 01: About540M/Hour

CH 02: About260M/Hour

CH 03: About130M/Hour

CH 04: About40M/Hour

Total Records: About7.8Hour

### 3) Parameters for image quality levels:

Quality	Resolution	Still Image Bitrate (Bit/s)	Movement Image Bitrate (Bit/s)	Audio Bitrate (Bit/s)	File Capacity
BASIC	2/3 D1 ( PAL: 480*384, NTSC: 480*320 )	350K	210K	64K	198M/hour
NORMAL	D1 ( PAL: 720*576, NTSC: 720*480 )	1000K	600K	64K	324M/hour
GOOD	D1 ( PAL: 720*576, NTSC: 720*480 )	1200K	720K	64K	432M/hour
HIGH	D1 ( PAL: 720*576, NTSC: 720*480 )	1500K	900K	64K	540M/hour

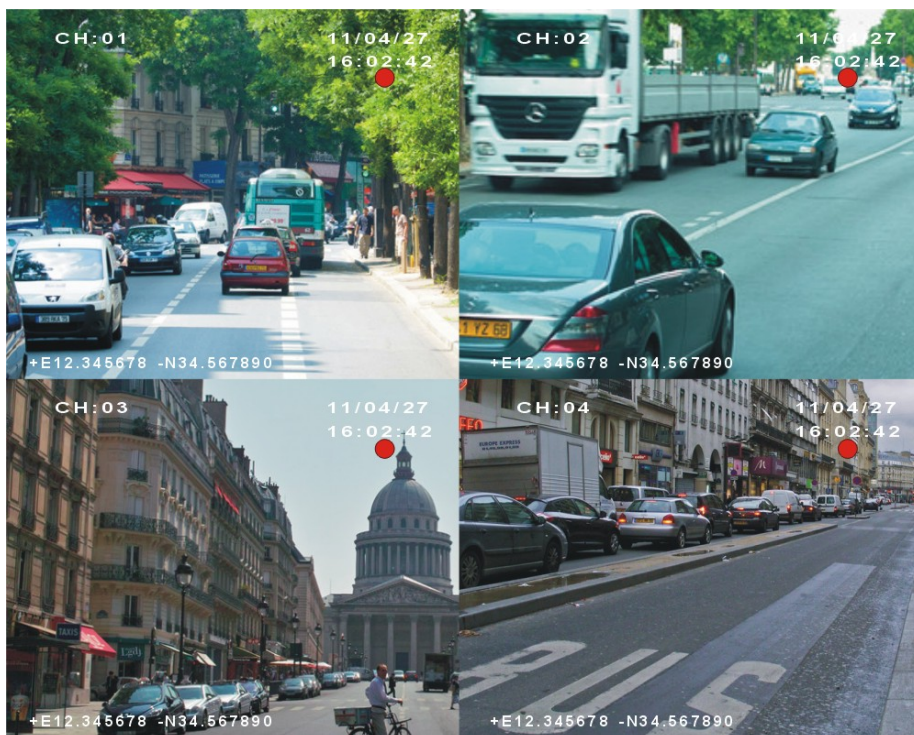
## 5.5 Start Recording

Press <REC> by remote to start recording. A red dot will be shown up at the top left corner of each camera channel. In Separate Mode, by default the DVR system will record all channels. If you want to record a specific channel(s), use <▲><▼><◀><▶> or number key "1", "2", "3", "4" to select the camera channel(s) and press <REC> to start.

### 1) Quad image in Composite Mode:



## 2) Quad Images in Separate Mode:



## 5.6 Playback Option

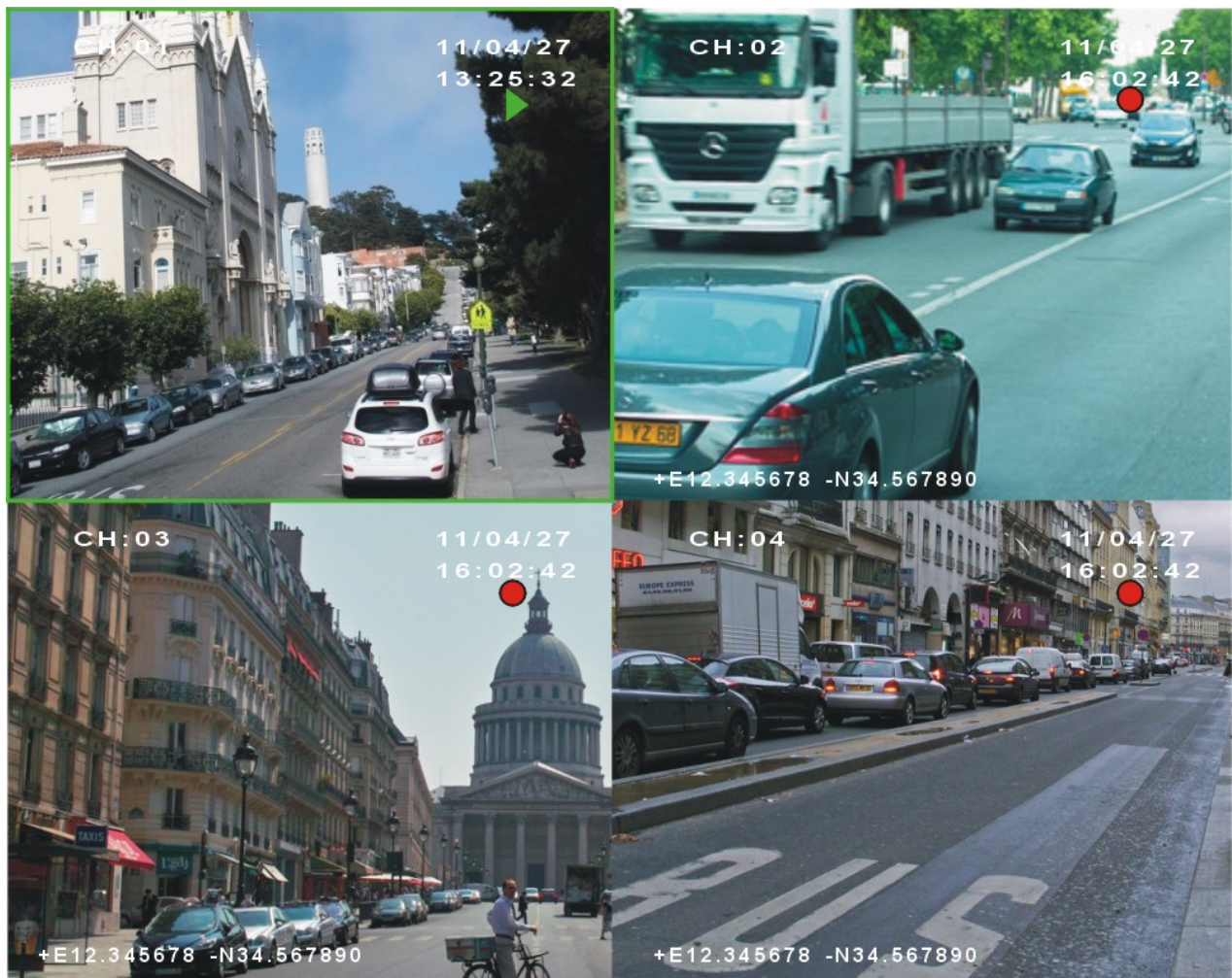
### 5.6.1 Playback files on DVR system

#### 1) Play-back the latest record file(s) directly.

In "Separate Mode", you can playback archive file when recording. Press <PLAY> by remote, it will playback the latest file of first camera channel (ch: 01). Use <▲><▼><◀><▶> or number key "1", "2", "3", "4" to select a specific camera channel, and press <PLAY> to playback. The play status is



indicated by a green triangle on the top right corner of monitor. You can press <▶>/<◀> to select a next or previous file. Toggle from quad mode to full screen by pressing <VIDEO>.



**NOTE: In "Composite Mode", please stop recording before trying to playback any archive file.**

- 2) Playback a specific archive file.
  - a) Press <MENU> by remote to enter the DVR system menu, choose "STORAGE" and enter its sub-menu, go to "SEARCH BY TIME" and press "MENU" to enter. All record directories will be listed for option. The directories will be listed by order of the date and hour. To take "2011-04-27\_14" for an example, it means this directory contains all files recorded from 14:00:00 to 14:59:59 of April 27, 2011.

SELECT A TYPE		◀ NORMAL VIDEO ▶
Video	dir	file(2)
Alarm	dir	file(0)
2011-04-27_14	dir	file(28)
2011-04-27_09	dir	file(2)
2011-04-26_09	dir	file(3)
2011-04-26_16	dir	file(1)
2011-04-25_15	dir	file(1)
2011-04-25_14	dir	file(2)

⏮ ⏭ PageDown | PageUp Total(15)

- b) Press <OK> or <MENU> by remote to enter a specific directory. All record files of the specific hour will be listed (The file with an 'A' suffix refers to Alarm Recording). Use <⏮>/<⏭> to turn a page.
- c) Use <⏮> or <⏭> to choose a file, and press <PLAY> to playback. By pressing <OK> or <MENU>, details of the specific file will be shown up:

VIDEO FILE	1_20110427-162001_1001p0.avi
VIDEO BEGIN	2011-04-27 16:20:01
VIDEO END	2011-04-27 16:25:01
VIDEO LENGTH	00:05:00
VIDEO SIZE	20.2M
VIDEO MODE	PAL
RESOLUTION	D1
FILE TYPE	avi
CHANEL NO.	Ch01
AUDIO	G711

Play

Save As

- d) You can press "Play" to playback the file, or "Save As" to copy the file to an USB flash drive. To stop playback, press <STOP> by remote.

### 5.6.2 Playback the files on manufacturer's PC Playback Software

- Install "PC Playback Software.exe" included on the CD onto your PC;
- Remove the hard disc from DVR system, and read on a PC by using a hard disc reader, then run the PC Playback Software to playback the files.

## 5.7, File Backup

- Insert an USB flash drive into USB port on front panel of the DVR system;
- Press <MENU> by remote, choose "STORAGE" and press <MENU> to enter its sub-menu;
- Go to "SEARCH BY TIME" and press <MENU> to enter the record directories;

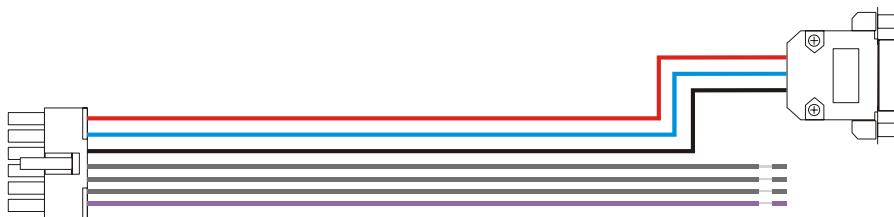


- d) Enter one directory and select a specific file needed to be copied, press <OK> or <MENU> to confirm;
- e) Choose "Save As" and press <MENU> to confirm, the selected file will be copied.

## 5.8 Alarm Recording

### 5.8.1 Setup The Alarm Action

The DVR system can be connected to 3 sensor (alarm) inputs. All these sensors (alarms) can trigger alarm recording. They can also turn on the buzzer, trigger to toggle video display, and trigger to show information on screen. Here is a diagram for sensor (alarm) cable & connector:



LABEL	Color	Description
SENSOR1	Brown	Sensor(Alarm) 1
SENSOR2	Brown	Sensor(Alarm) 2
SENSOR3	Brown	Sensor(Alarm) 3
SENSOR4	Violet	Speed Sensor

Press <MENU> by remote to enter the DVR system menu, choose "ALARM" and press <MENU> to enter its sub-menu. Go to "ALARM ACTION" and press <MENU> to enter.

### ALARM

POSE EVENT RECORD	◀ 15s ▶	⏮ ⏭
ALARM ACTION	SETUP ACTION FOR ALARM	📝
MOTION ZONE	CUSTOMIZE MOTION ZONE...	📝
MOTION ACTION	SETUP ACTION FOR MOTION	📝
MOTION SENSITIVITY	◀ 5 ▶	⏮ ⏭
VIDEO LOSE	VIDEO LOST SETTINGS	📝

Taking "01+02+03" for an example, channel 1, 2 & 3 will start to record when the sensor (alarm) 3 is triggered. The "LEVEL" is set to "HIGH", which means the "sensor(alarm) 3" will be enabled if it is connected to the HIGH level (+12V). If you need the "sensor(alarm) 3" to be triggered by LOW level (GND), you should set this to be "LOW". If you set the "TOGGLE" as "CH 01", the screen will toggle to CH 01 in full screen automatically when "sensor(alarm) 3" is triggered.

NO.	RECORD	TIP	LEVEL	TOGGLE	OUTPUT	BEEP
01	◁ CH 01 ▷	A01	◁HIGH▷	◁ CH01 ▷	◁ OFF ▷	◁ ON ▷
02	◁ CH 01+02 ▷	A02	◁HIGH▷	◁ CH02 ▷	◁ OFF ▷	◁ ON ▷
03	◁ 01+02+03 ▷	A03	◁HIGH▷	◁OFF ▷	◁ OFF ▷	◁ ON ▷
SPD	◁ ALL ▷	OSPD	◁HIGH▷	◁OFF ▷	◁ OFF ▷	◁ ON ▷

When alarm recording is triggered, a yellow blinking dot will be displayed on the top right corner.

Remarks for each option:

**NO.:** SENSOR 1, SENSOR 2, SENSOR3.

**RECORD:** Choose the channel(s) to start to record when the sensor(alarm) recording is triggered. There are a total of 16 modes: OFF, CH 01, CH 02, CH 01+02, CH 03, CH 01+03, CH 02+03, 01+02+03, CH 04, CH 01+04, CH 02+04, 01+02+04, CH 03+04, 01+03+04, 02+03+04, ALL.

**TIP:** Information to be shown on screen. There is a dialog box for inputting the text. Maximum: 4 characters. There are four alarm sources: A01: Sensor1, A02: Sensor2, A03: Sensor3 and OSPD: Over Speed.

**LEVEL:** HIGH / LOW; High means Alarm input voltage higher than 5V, and Low means lower than 3V.

**TOGGLE:** It will toggle to the camera you set in full screen automatically when sensor(alarm) is triggered. There are a total of 5 modes: OFF, CH01, CH02, CH 03, CH04.

**OUTPUT:** OFF (ON is not available yet).

**BEEP:** ON / OFF.

### 5.8.2 Post Event Record

The DVR system can implement post-recording in modes of alarm recording and motion detection recording. That means, the DVR system will keep recording for scheduled time after alarm recording completes.

- 1) Press <MENU> by remote to enter the DVR system menu;
- 2) Choose "ALARM" and press <MENU> to go to its sub-menu;
- 3) Go to "POST EVENT RECORD" and use <◀> or <▶> to set the post-recording time(0s, 10s, 20s, 30s, 45s, 60s, 180s available).
- 4) Press <OK> to save the setting and exit.

ALARM

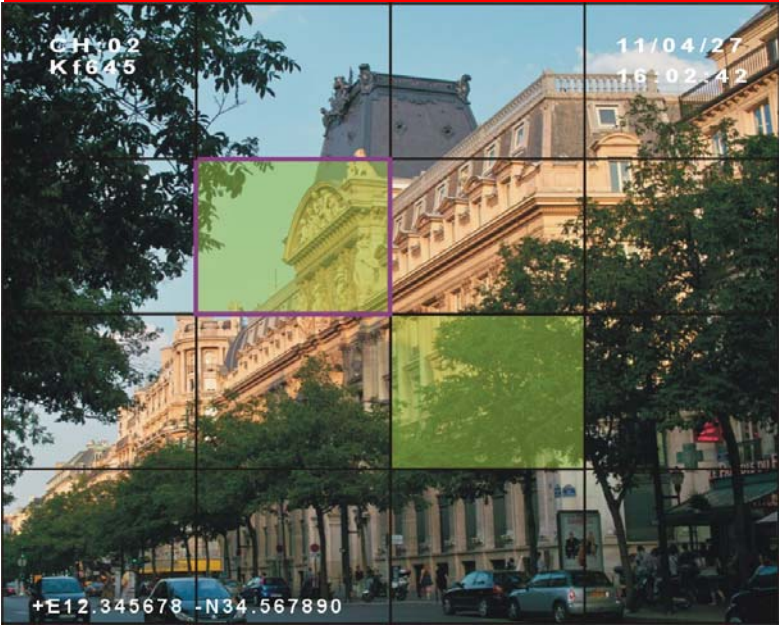
POST EVENT RECORD	◁ 15s ▷
ALARM ACTION	SETUP ACTION FOR ALARM
MOTION ZONE	CUSTOMIZE MOTION ZONE...
MOTION ACTION	SETUP ACTION FOR MOTION
MOTION SENSITIVITY	◁ 5 ▷
VIDEO LOSE	VIDEO LOST SETTINGS

5.9 Motion Detection

5.9.1 Set Motion Detection Zone

Press <MENU> by remote to enter the DVR system menu, choose "ALARM", go to "MOTION ZONE" and press <MENU> to set the area: Choose the zone(s) which you want to monitor by using <▲> , <▼> , <◀> and <▶>.

**NOTE: Please press <MENU> by remote to confirm after choosing each zone if you need select more than one zone.**



5.9.2 Set Motion Detection Action

Press <MENU> to enter the DVR system menu, choose "ALARM" to enter its sub-menu, go to "MOTION ACTION" and press <MENU> to enter, set the "RECORD" as "ON", press <OK> to save and exit. When motion detection is triggered, you will see a yellow dot flashing at the upper right corner.

ALARM		CH	RECORD	OUTPUT	BEEP	
		01	◁ ON ▷	▷ OFF ▷	▷ ON ▷	
POST EVENT		02	▷ OFF ▷	▷ OFF ▷	▷ ON ▷	▷ ↓
ALARM ACTION		03	◀ ON ▶	▷ OFF ▷	▷ ON ▷	RM [icon]
MOTION ACTION		04	▷ OFF ▷	▷ OFF ▷	▷ ON ▷	ONE... [icon]
MOTION SENSITIVITY						TION [icon]
MOTION SENSITIVITY						▷ ↓
VIDEO LOSS						S [icon]

5.9.3 Set Motion Sensitivity

Press <MENU> to enter the DVR system menu, choose "ALARM" to enter its sub-menu, go to "MOTION SENSITIVITY", and press <◀> or <▶> to sensitive level (1~9 levels for option). "1" refers to lowest sensitive level, and "9" refers to highest.

ALARM

POST EVENT RECORD	◀ 15s ▶	▶ ⏴
ALARM ACTION	SETUP ACTION FOR ALARM	📄
MOTION ZONE	CUSTOMIZE MOTION ZONE...	📄
MOTION ACTION	SETUP ACTION FOR MOTION	📄
MOTION SENSITIVITY	◀ 5 ▶	▶ ⏴
VIDEO LOSE	VIDEO LOST SETTINGS	📄

5.10 Video Lost Alarm

The buzzer can be set as "ON" to trigger the beeper when any video lost. Press <MENU> to enter the DVR system menu, choose "ALARM" and press <MENU> to enter its sub-menu, go to "VIDEO LOST" and set the buzzer as "ON", press <OK> to save and exit.

ALARM	VIDEO LOST CHANNEL	BEEP	
	01	◀ ON ▶	
	02	◀ ON ▶	
	03	◀ ON ▶	
POST EV	04	◀ ON ▶	▶ ⏴
ALARM			ALARM 📄
MOTIO			N ZONE... 📄
MOTIO			MOTION 📄
MOTION			▶ ⏴
VIDEO			NGS 📄

5.11 Schedule Recording

Press <MENU> by remote to enter the DVR system menu, choose "RECORD" and press <MENU> to enter its sub-menu, go to "RECORD SETTINGS" and press <MENU> to enter. The defaulted "REC MODE" is "AUTO", change it to "MANUAL" by press <MENU>, press <OK> to save and exit. Go to "RECORD

SCHEDULE” and set the recording time.

## RECORD

RECORD SETTINGS		QUALITY AUDIO...	
FILE	EVERY DAY		
FILE			
ASK Y	1: FROM 08 : 00 TO 12 : 02		
ECOF	2: FROM 14 : 00 TO 18 : 02	SCHEDULE	
CHAN	3: FROM 20 : 00 TO 34 : 02		
<div>OK CANCEL RESET</div>			

## 5.12 Video System Setting

Press <MENU> to enter the DVR system menu, Choose “System” to enter its sub-menu, set the “VIDEO FORMAT” as PAL or NTSC, and press <OK> to save and exit.

## SYSTEM

VIDEO FORMAT	<input checked="" type="checkbox"/> PAL	
NEW PASSWORD	*****	
LOGIN VERIFY	<input checked="" type="checkbox"/> NO	
LANGUAGE	<input checked="" type="checkbox"/> ENGLISH	
TIME ZONE	TIME ZONE & DST	
DATE/TIME	2011/04/27 16:11:34	
SYSTEM INFO	VERSION UPDATE...	
CONFIG SETUP	CUSTOMIZE YOUR	
APP RESTART	RESTART THIS APPLICATION	
OS REBOOT	REBOOT FROM OS	

## 5.13 Set Date and Time

### 5.13.1 Set Date Display Format

Press <MENU> to enter the DVR system menu, choose “SYSTEM” and press <MENU> to enter its sub-men, go to “TIME ZONE” and set the “DATE FORMAT”, “YY/MM/DD”, “MM/DD/YY” or “DD/MM/YY”.

## TIME ZONE

DATE FORMAT	<input checked="" type="checkbox"/> YY / MM / DD	
DST	YY / MM / DD	
TIME ZONE	MM / DD / YY	
	DD / MM / YY	

### 5.13.2 Set The Time Zone

Press <MENU> to enter the DVR system menu, choose "SYSTEM" and press <MENU> to enter its sub-menu, choose "TIME ZONE" and press <MENU> to enter, go to "TIME ZONE" and select the right time zone.

#### TIME ZONE

DATE FORMAT	YY / MM / DD	
DST	USA	
TIME ZONE	PST UTC -8h	
	PDT UTC -7h	
	PST UTC -8h	
	YST UTC -9h	

### 5.13.3 Set Date and Time

Press <MENU> to enter the DVR system menu, choose "SYSTEM" and press <MENU> to enter its sub-menu, go to "DATE/TIME" and press <MENU> to set date and time, press <OK> to save and exit.

#### SYSTEM

VIDEO FORMAT	PAL	
NEW PASSWORD	*****	
LOGIN VERI		
LANGUAGE	DATA 2011 04 27	
TIME ZONE	TIME 16 12 51	
DATE/TIME	OK CANCEL	
SYSTEM INFO	VERSION UPDATE...	
CONFIG SETUP	CUSTOMIZE YOUR	
APP RESTART	RESTART THIS APPLICATION	
OS REBOOT	REBOOT FROM OS	

### 5.14 Configuration Setup

Press <MENU> to enter the DVR system menu, choose "SYSTEM" to enter its sub-menu, go to "CONFIG SETUP" and press <MENU> to enter, and customize your configuration.

#### CONFIG SETUP

USER CONFIG SAVE	SAVE CURRENT USER CONFIG
USER CONFIG RESET	RESET ALL TO USER CONFIG
FACTORY RESET	RESET ALL TO DEFAULT
CONFIG EXPORT	EXPORT CONFIG INTO A FILE
CONFIG IMPORT	IMPORT CONFIG FROM A FILE

### 1) User Config Save

If some system configurations are modified, and you want to make a save copy for this, please choose "USER CONFIG SAVE" and press <MENU>, all configuration modifications will be save to internal flash of the DVR system.

### 2) User Config Reset

If some improper modifications have been done, and you would like to reset to the previous configuration that you have saved, please choose "USER CONFIG RESET" and press <MENU> to reset.

### 3) Factory Reset

The user can press "FACTORY RESET" to reset to the factory defaulted settings. After this is pressed, the system will restart automatically.

### 4) Config Export / Import

Press "CONFIG EXPORT", the settings will be saved automatically onto the hard disc. If the same configuration is required for other DVR systems, just insert the hard disc into the DVR, and choose "CONFIG IMPORT" to import the settings. After importing successfully, the DVR system will restart automatically.

## 5.15 User Level and Password Setting

The defaulted system enter is with no password. To set the user name and password,

- 1) Press <MENU> to enter the DVR system menu, choose "SYSTEM" and press <MENU> to enter its sub-menu, set the "LOGIN VERIFY" to be "YES", press <OK> to save and exit.

### SYSTEM

VIDEO FORMAT	PAL
NEW PASSWORD	*****
LOGIN VERIFY	YES
LANGUAGE	NO
TIME ZONE	YES
DATE/TIME	2011/04/27 16:11:34
SYSTEM INFO	VERSION UPDATE...
CONFIG SETUP	CUSTOMIZE YOUR
APP RESTART	RESTART THIS APPLICATION
OS REBOOT	REBOOT FROM OS

- 2) Escape from the DVR system menu, when enter again, you will be required for use name:





- 3) The system is defaulted to be entered with no password. If password is required, go to "NEW PASSWORD" and set the password. Input the same password in both rows of "New Pass" and "Pass Confirm", press <OK> or <MENU> to save and exit.

## SYSTEM

VIDEO FORMAT	◀ PAL ▶	▶ ⏏
NEW PASSWORD	*****	⏏
LOGIN V	◀ ADMIN ▶	▶ ⏏
LANGUAGE	New Pass	▶ ⏏
TIME ZO	Pass Confirm	▶ ⏏
DATE/TIM	OK	⏏
SYSTEM	CANCEL	⏏
CONFIG SETUP	CUSTOMIZE YOUR	⏏
APP RESTART	RESTART THIS APPLICATION	⏏
OS REBOOT	REBOOT FROM OS	⏏

### 5.16 Network Setting

The system supports both Static IP and Dynamic IP. Press <MENU> to enter the DVR system menu, choose "NETWORK" and press <MENU> to enter its sub-menu, go to "NETWORK TYPE" and set it as "LAN" (Static IP) or "DHCP" (Dynamic IP).

- 1) If it is static IP mode, you may choose "IP ADDRESS", "SUBNET", "GATEWAY" and "DNS SERVER" to set each option.



## NETWORK

PORT	10000	
NETWORK TYPE	LAN	
IP ADDRESS	192.168.0.220	
SUBNET	255.255.255.0	
GATEWAY	192.168.0.1	
DNS SERVER	192.168.0.1	
HOST NAME	111	

## NETWORK

PORT	10000																									
NETWORK	<table><tr><td>IP ADDRESS</td><td>192</td><td>168</td><td>0</td><td>220</td></tr><tr><td>SUBNET</td><td>255</td><td>255</td><td>255</td><td>0</td></tr><tr><td>GATEWAY</td><td>192</td><td>168</td><td>0</td><td>1</td></tr><tr><td>DNS SERVER</td><td>192</td><td>168</td><td>0</td><td>1</td></tr></table>					IP ADDRESS	192	168	0	220	SUBNET	255	255	255	0	GATEWAY	192	168	0	1	DNS SERVER	192	168	0	1	 
IP ADDRESS						192	168	0	220																	
SUBNET						255	255	255	0																	
GATEWAY						192	168	0	1																	
DNS SERVER						192	168	0	1																	
IP ADDRESS																										
SUBNET																										
GATEWAY																										
DNS SERVER																										
HOST NAME	<div>OK</div> <div>CANCEL</div>																									

After setting, please press <MENU> or <OK> to save and exit.

- 2) If it is dynamic IP, the system will configure the IP address automatically.
- 3) "HOST NAME" is used for setting the DVR system's name.

## 5.17 MOTOR

### 5.17.1 Set "LICENSE ID" and "LINE"

Press <MENU> to enter DVR system menu, choose "MOTOR" and press <MENU> to enter its sub-menu. Set the "LICENSE ID" and "LINE", press "OK" to save and exit. The information will be displayed at the top left corner.

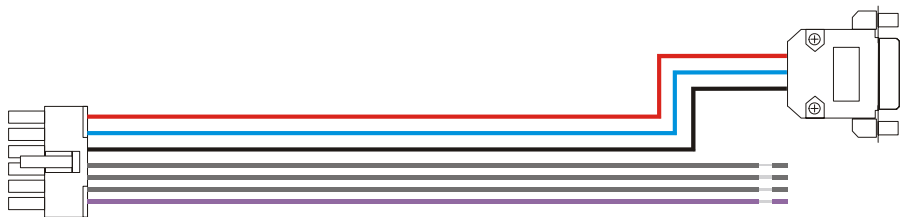
## MOTOR

LICENSE ID	J56974	
LINE	TEXT INPUT	
OVERSPEED		
SPEED CHECK	J56974	
PULSES	<div>OK</div> <div>CANCEL</div>	
PULSES UNIT		

MOTOR

LICENSE ID	J56974	
LINE		
OVERSPEED	TEXT INPUT	
SPEED CHECK	373	▶ ▼
PULSES	OK CANCEL	
PULSES UNIT	□ / km	▶ ▼

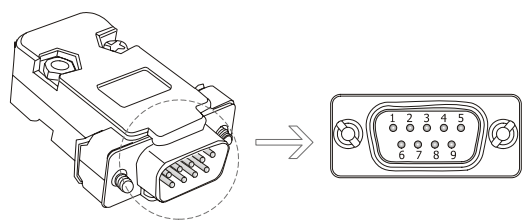
5.17.2 Get Speed from GPS



TXD1	TXD2	485A	5V	SNR2	SPEED
RXD1	RXD2	485B	GND	SNR3	SNR1

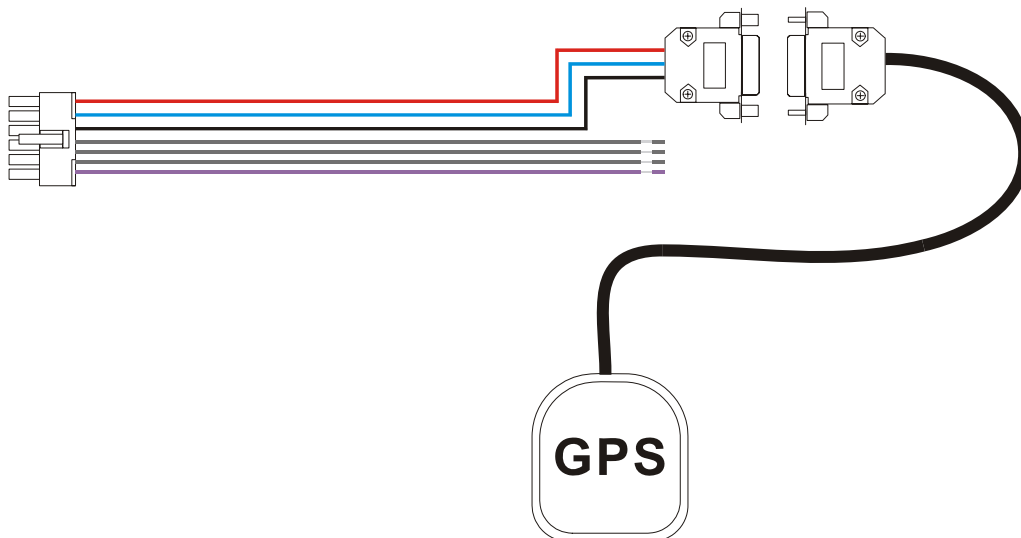
Pin No.	Description	Color	Description	GPS Connector
1	TXD1	Vacant	TXD, COM1, (GPS)	
2	TXD2	Vacant	TXD, COM2	
3	485A	Vacant	RS485 A, (PTZ)	
4	5.0V	Red	+5 VDC	Pin 9
5	SNR2	Grey	Sensor 2	
6	SPEED	Violet	Speed sensor	
7	RXD1	Vacant	RXD, COM1, (GPS)	
8	RXD2	Blue	RXD, COM2	Pin 3
9	485B	Vacant	RX485 B, (PTZ)	
10	GND	Black	Ground	Pin 5
11	SNR3	Grey	Sensor 3	
12	SNR1	Grey	Sensor 1	

GPS connector (RS232 COM1)



PIN	Description
3	RXD2: Data receive
5	GND: Ground
9	+5V DC: Power output

- 1) Connect GPS receiver to DVR system through the sensor harness:



- 2) Press **<MENU>** to enter DVR system menu, choose **"MOTOR"** and press **<MENU>** to enter its sub-menu, set the **"SPEED CHECK"** as **"From GPS"**, and press **"OK"** to save and exit.

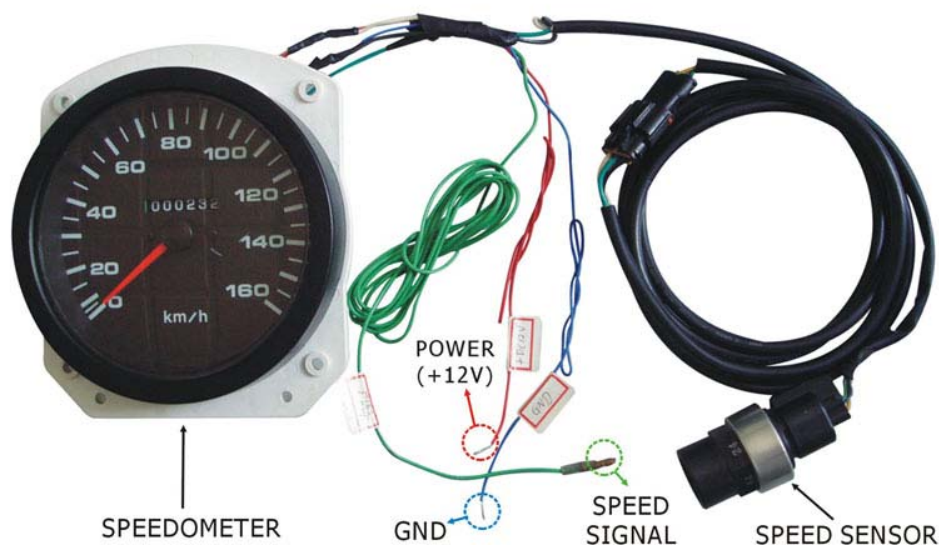
## MOTOR

LICENSE ID	J56974	📄
LINE	373	📄
OVERSPEED	120km/h	📄
SPEED CHECK	☑ FROM GPS	▶ ⬇
PULSES	From Sensor	
PULSES UNIT	FROM GPS	
	OFF	

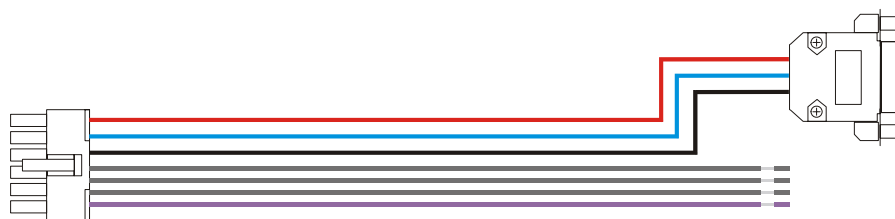
- 3) The speed will be displayed on the left bottom of the monitor. If you need the speed to be "MPH" other than "KM/H", please select **"mile"** in the **"PULSES UNIT"**.

**NOTE:** If no GPS device is connected to the DVR system, speed on monitor will stay as "0.0KMH". To hide this information, set the **"SPEED CHECK"** as **"OFF"**.

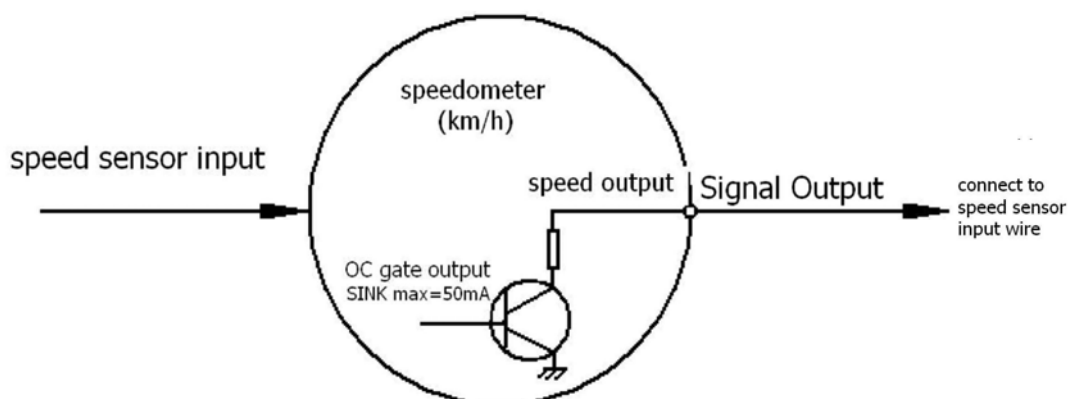
### 5.17.3 Get Speed from Speedometer.



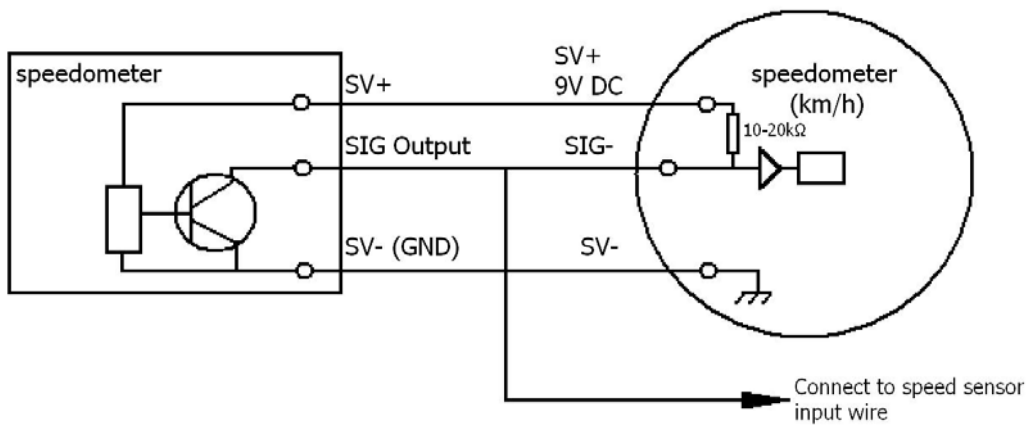
- 1) Connect the speed sensor harness (in Violet color) to speedometer.



- 2) If the speedometer already has a signal output wire (showed as SIG output in the following diagram), you can connect "Speed sensor input" wire to the SIG output wire directly.



- 3) If the speedometer does NOT have a signal output wire, please connect to the output of speed sensor. This could also be input of the speedometer.



- 4) Press **<MENU>** to enter DVR system menu, choose "MOTOR" and press **<MENU>** to enter its sub-menu, set the "SPEED CHECK" as "From Sensor", and press **<OK>** or **<MENU>** to save and exit.

## MOTOR

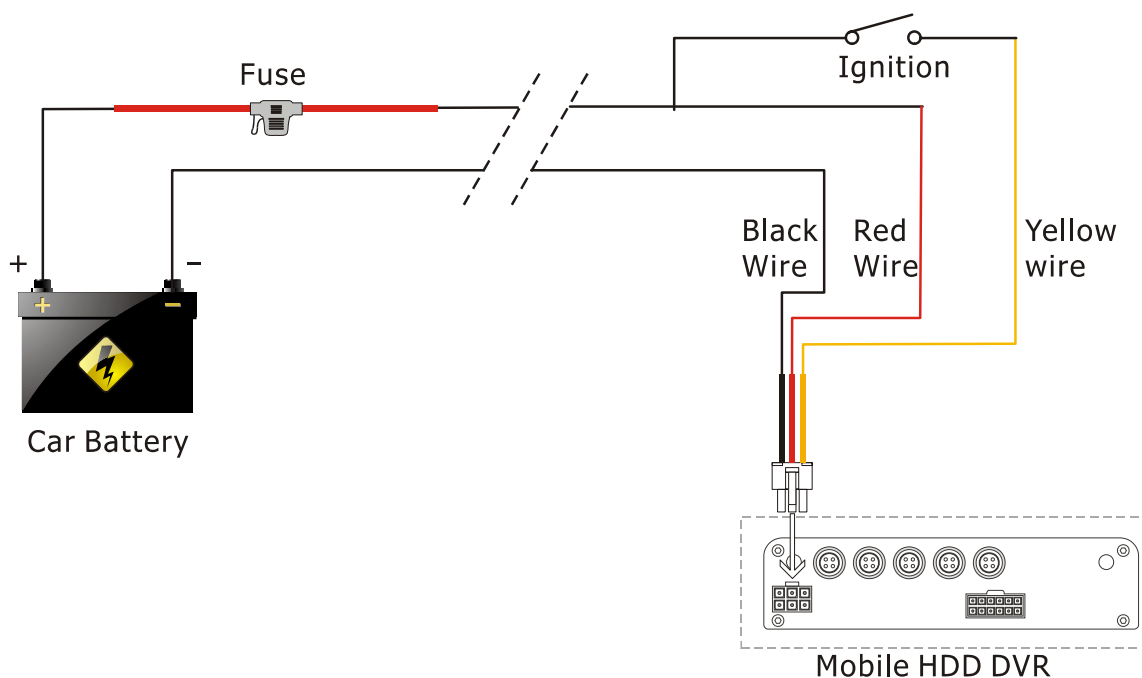
LICENSE ID	J56974	
LINE	373	
OVERSPEED	120km/h	
SPEED CHECK	From Sensor	
PULSES	From Sensor	
PULSES UNIT	From GPS	
	OFF	

- 5) Calculate the pulse number the speed sensor generates for one kilometer. Usually the speed sensor will generate 8 or 16 pulses if the wheel goes one round and you need to calculate the number of the pulse that the speed sensor will generate if the car runs for one kilometer. Then set the number to "**Pulse No.**".
- 6) While in a real application, it's not easy to pulse number by the calculation on the paper. In this case, you can choose the menu item "**10 Vehicle Setup**", then set the "**Pulse No.**" to be "**0**". Then you drive the car for one kilometer. The number in the "**Pulse No.**" will increase as you are driving. The number showed in the "**Pulse No.**" once you get to one kilometer would be the number you need.

## 5.18 Manage the power

### 5.18.1, Use ignition switch to turn on/off the DVR system

- 1) Connect ignition switch to the yellow wire of power supply cable, and red / black wire to the "+" / "-" pole of the car battery. The DVR system will be turned on when the ignition switch is in the ON position, and commences recording. To stop the recording process, place the system switch in the OFF position.



- 2) If the OFF DELAY option is enabled, the DVR will continue to record for the prescribed number of seconds. When the off-delay expires, the camera and DVR system shut off.
- 3) Set OFF DELAY. Press <MENU> to enter the DVR system menu, choose "POWER" and press <MENU> to enter its sub-menu. Go to "POWER OFF DELAY" and set the number of seconds. The maximum number you can input is 86400 seconds (24 hours). If the number is set to 0, the camera and DVR system shut off right after the ignition switch if in the OFF position.

## POWER

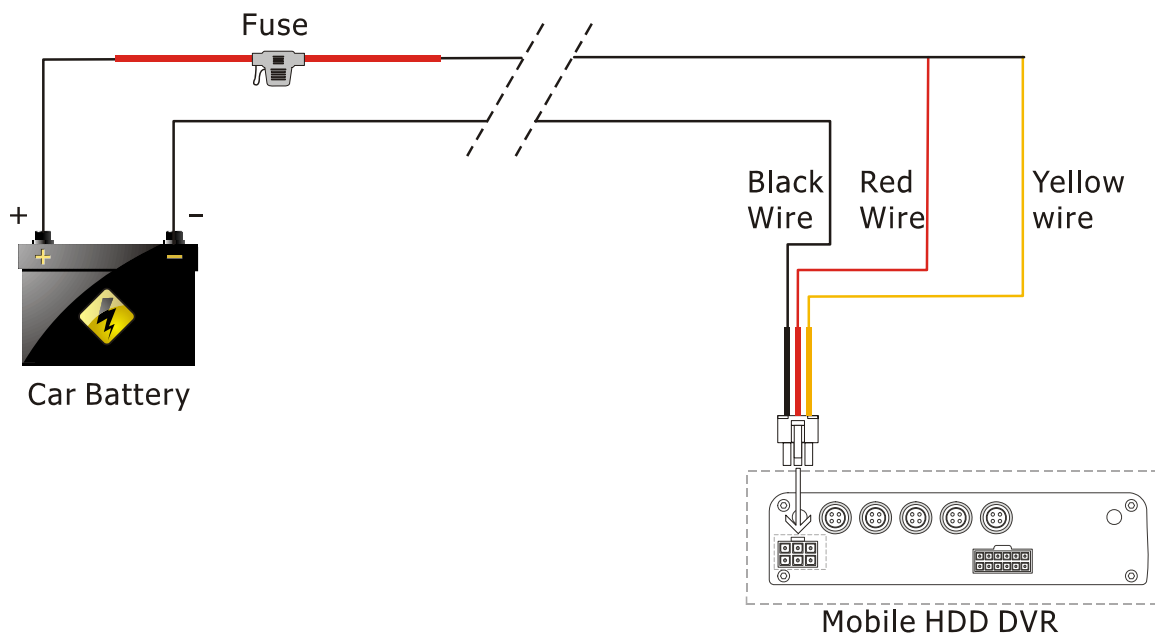
POWER ON	07:30	
POWER OFF	22:00	
POWER OFF DELAY	30S	
IGNITION SIGNAL	HIGH LEVEL	

- 4) If the vehicle is using low level as ignition signal, you need to set the "IGNITION SIGNAL" as "LOW LEVEL".

**NOTE: If the vehicle uses low level as ignition signal, you need to set the "IGNITION SIGNAL" as "LOW LEVEL" .**

### 5.18.2, Turn On / Off DVR System Automatically

- 1) Connect the DVR system to car battery as diagram shown below. Note: Please connect the yellow wire (ignition wire) to the "+" pole (+12V or +24V) of car battery.



- 2) Press **<MENU>** to enter DVR system menu, choose "POWER" and press **<MENU>** to enter its sub-menu.

## POWER

POWER ON	07:30	
POWER OFF	22:00	
POWER OFF DELAY	30S	
IGNITION SIGNAL	HIGH LEVEL	

- a) Go to "POWER ON" and set the time you would like the DVR system to be turned on.
- b) Go to "POWER OFF" and set the time you would like the DVR system to be turned off.
- c) If turning on/off automatically is not required, leave the "POWER ON" and "POWER OFF" time as "00: 00" by default.

## POWER

POWER ON	07:30	
POWER OFF		
POWER OFF		
IGNITION SI		

TIME INPUT

HH:MM 07 : 30

OK
CANCEL

## 5.19 Use PTZ

### 5.19.1 PTZ Control

- 1) Connect the RS485 of DVR system to PTZ communication port.
- 2) Press <MENU> to enter DVR system menu, choose "LIVE" and press <MENU> to enter its sub-menu, go to "PTZ PARAMETER" and press <MENU> to enter, set the "PTZ CONTROL" as "ON", set other parameter if needed. Press <OK> to save and exit.

LIVE

OSD			▶▶	⬇
BACK	PTZ CONTROL	◀ ON ▶	▶	⬇
SEQ-D	PROTOCOL	◀ PELCO-D ▶	▶	⬇
VIDEO	BAUDRATE	◀ 9600 ▶	▶	⬇
CAME	ADDRESS	01		
PTZ PA	PAN/TILT SPEED	10		
		OK	CANCEL	

- 3) Use the remote to control PTZ: Press <ESC> to escape from the DVR system menu, press <OK> to get
- 4) "PTZ CONTROL". Key buttons for PTZ control:

Key Buttons on Remote	Function
VIDEO	Select camera channel (CH:01, CH:02, CH:03, CH:04)
▲/▼/◀/▶	Move camera direction
⏮/⏭	Zoom - / Zoom +
⏪/⏩	Focus + / Focus -
PAUSE/OSD	Iris+ / Iris-

### 5.19.2 Rename the camera

- 1) Press <MENU> to enter the DVR system menu, choose "LIVE" to enter its sub-menu, go to "OSD" and set it as "ON",
- 2) Press <MENU> to enter the DVR system menu, choose "LIVE" to enter its sub-menu, go to "CAMERA TITLE" and press <MENU> to enter, rename each camera by press <MENU> to get the "TEXT INPUT" dialog box:

LIVE

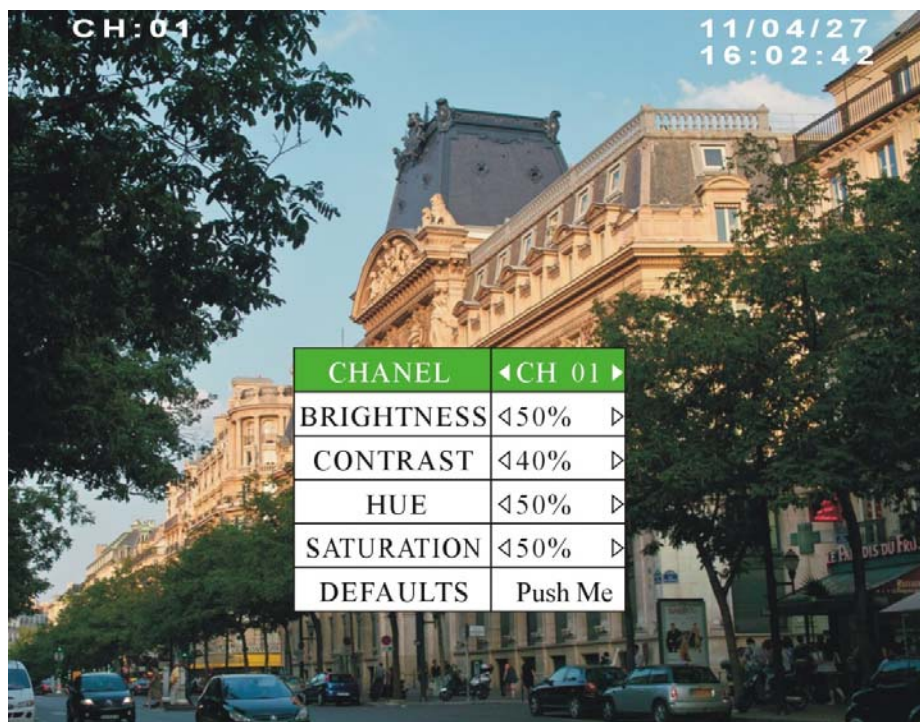
OSD	◀ ON ▶		▶	⬇
BACKGROUND	◀ OPAQUE ▶		▶	⬇
SEQ-DW			▶	⬇
VIDEO AD	CAMERA	◀ CH 02 ▶	▶	⬇
CAMERA	TITLE	CH : 02		
PTZ PAR	OK		CANCEL	

- 3) After pressing <OK> to save the change, the new camera name will be shown on the OSD.



### 5.19.3 Video Adjustment

- 1) Press <MENU> to enter the DVR system menu, choose "LIVE" to enter its sub-menu, go to "VIDEO ADJUSTMENT" and press <MENU> to enter, adjust the brightness, contrast, hue and saturation.



- 2) Press <OK> to save and exit, or <ESC> to discard the change. If you want to resume to the defaulted settings, just go to "DEFAULTS" and press <MENU> or <OK> to confirm.

**NOTE: With the consideration of PTZ control is few used in mobile application. The DVR system does NOT support PTZ by defaulted. Please inform your sales person before mass production if you need this function.**

### 5.20 GPS Setting (Option)

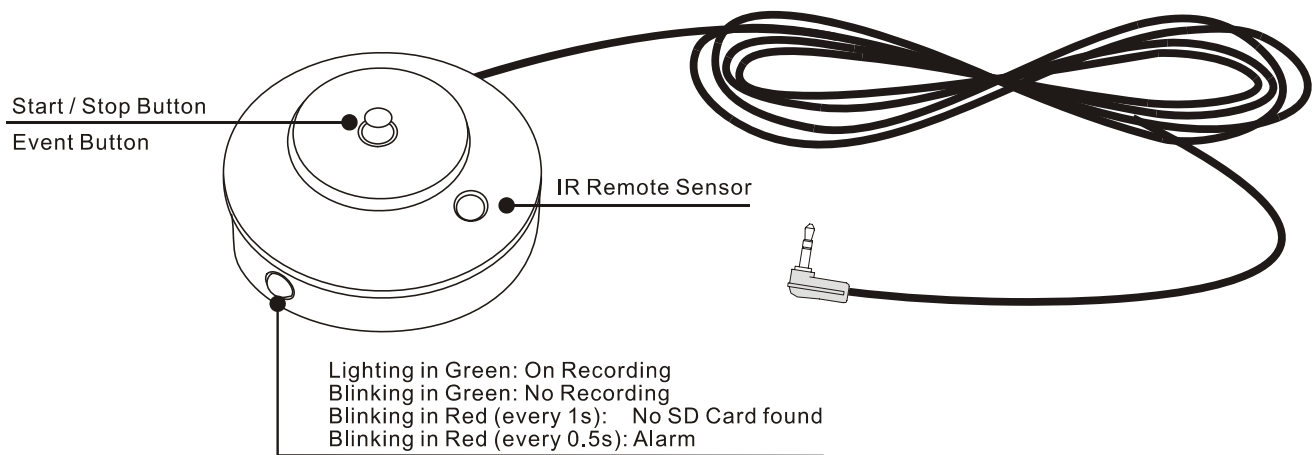
Press<MENU> to enter the DVR system menu, choose "GPS" to enter its sub-menu.

#### GPS

GPS DEVICE	GPS OK	
GPS BURNIN	ON	
GPS TIME SYNC	ON	
BAUDRATE	4800	

- a) The DVR system will check the GPS device automatically. If a GPS device is found to be connected, the "GPS DEVICE" will show "GPS OK"; if no GPS device is found, it will show "GPS NONE".
- b) "GPS BURNIN" can be set as "ON" or "OFF". If it is set to be "ON", the GPS coordinate will be shown on the screen; if it is set to be "OFF", the coordinate will be hid.
- c) "GPS TIME SYNC" can be set as "ON" or "OFF". If it is set to be "ON", it will synchronize the DVR system time automatically (Recommended). If it is set to be "OFF", it may not synchronize the time.
- d) "BAUDRATE" refers to GPS communication baudrate. The defaulted baudrate is 4800. 2400, 9600, 19200, 38400, 57600, 115200 for options.

### 5.21 Event Button & Cable Setting (Option)



**Two different applications of the Event Button & Cable:**

- 1) **Work as “Start/Stop Recording”.**
  
- 2) **Work as “Alarm Input”.**
  - 1) Press <MENU> by remote to enter the DVR system menu;
  - 2) Choose “ALARM” and press <OK> or <MENU> to enter its sub-menu;
  - 3) Go to “POST EVENT RECORD” and set the time, press <MENU> or <OK> to save and exit.

ALARM

POSE EVENT RECORD	◀ 15s ▶	▶ ⬇
ALARM ACTION	SETUP ACTION FOR ALARM	📝
MOTION ZONE	CUSTOMIZE MOTION ZONE...	📝
MOTION ACTION	SETUP ACTION FOR MOTION	📝
MOTION SENSITIVITY	◀ 5 ▶	▶ ⬇
VIDEO LOSE	VIDEO LOST SETTINGS	📝

**NOTE: The time you set will reflect to the recording time once Event Button is pressed. To take the defaulted “15s” for an example, the alarm recording will last for 15 minutes since the Event Button is pressed, then stop.**

- 4) If you use Separate Mode for recording, press <MENU> to enter the DVR system menu, choose “ALARM” and press <MENU> to enter its sub-menu, go to “ALARM ACTION” to set the camera channel.

## ALARM

POSE EVENT RECORD	◀ 15s ▶ ⬇
ALARM ACTION	SETUP ACTION FOR ALARM 📝
MOTION ZONE	CUSTOMIZE MOTION ZONE... 📝
MOTION ACTION	SETUP ACTION FOR MOTION 📝
MOTION SENSITIVITY	◀ 5 ▶ ⬇
VIDEO LOSE	VIDEO LOST SETTINGS 📝

NO.	RECORD	TIP	LEVEL	TOGGLE	OUTPUT	BEEP
01	◀ OFF ▶	A01 📝	<HIGH>	◀ CH01 ▶	◀ OFF ▶	◀ ON ▶
02	◀ OFF ▶	A02 📝	<HIGH>	◀ CH02 ▶	◀ OFF ▶	◀ ON ▶
03	◀ OFF ▶	A03 📝	<HIGH>	◀ OFF ▶	◀ OFF ▶	◀ ON ▶
SPD	◀ OFF ▶	OSPD 📝	<HIGH>	◀ OFF ▶	◀ OFF ▶	◀ OFF ▶
PANIC	◀ CH 01 ▶	PAN 📝	<HIGH>	◀ OFF ▶	◀ OFF ▶	◀ OFF ▶

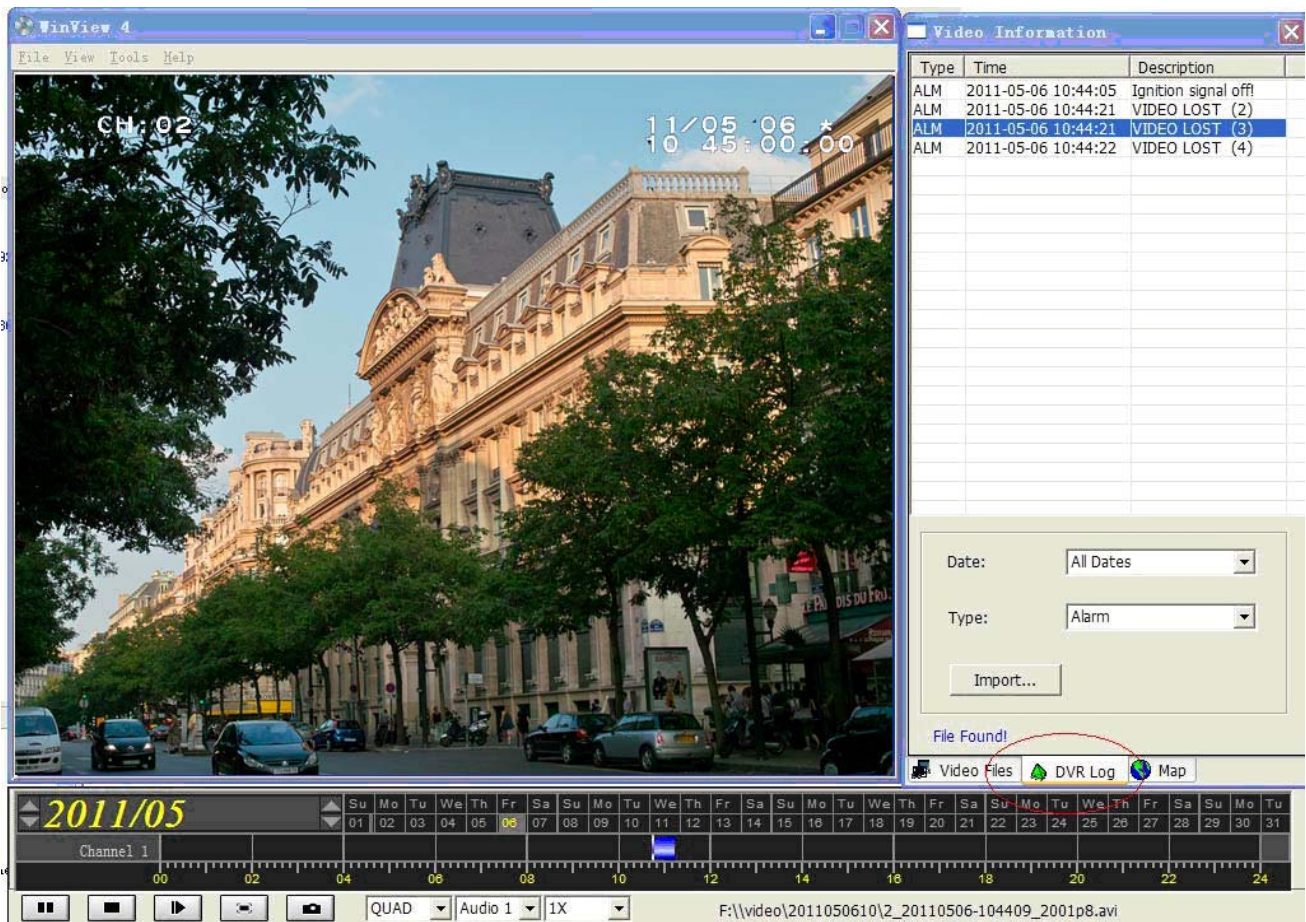
There are a total of 16 modes: OFF, CH 01, CH 02, CH 01+02, CH 03, CH 01+03, CH 02+03, 01+02+03, CH 04, CH 01+04, CH 02+04, 01+02+04, CH 03+04, 01+03+04, 02+03+04, ALL. The defaulted camera channel is CH 01. In Composite Mode, the quad mode will be regarded as "CH 01".

- 5) You can also set up the text you want to display in the "TIP" of "ALARM ACTION". The text you set will be displayed if the event is triggered.

NO.	RECORD	TIP	LEVEL	TOGGLE	OUTPUT	BEEP
01	◀ OFF ▶	A01 📝	<HIGH>	◀ CH01 ▶	◀ OFF ▶	◀ ON ▶
02	◀ OFF ▶	A02 📝	<HIGH>	◀ CH02 ▶	◀ OFF ▶	◀ ON ▶
03	◀ OFF ▶	A03 📝	<HIGH>	◀ OFF ▶	◀ OFF ▶	◀ ON ▶
SPD	◀ OFF ▶	TEXT INPUT			◀ OFF ▶	◀ OFF ▶
PANIC	◀ CH 01 ▶				◀ OFF ▶	◀ OFF ▶
		PAN				
		<div>OK</div> <div>CANCEL</div>				

- a) Connect the Event Cable to front panel of the DVR unit.  
b) Press the Event button, the LED will flash in red, and you will hear buzzer if you set the "BEEP" as "ON", it means alarm recording is triggered.

c) The alarm recording is recorded in the log file. Please use the AVPlayer to view the log information.




**NOTE: DVR system's firmware for the two applications is different. Please tell your sales person the exact application before mass production.**

### 5.22 Firmware Update

- 1) Copy the update file to the root directory of hard disc. The update file has the postfix of "tar".
- 2) Insert the hard disc into the hard disc slot on front panel of the DVR system, press <MENU> by remote to enter the DVR system menu.
- 3) Choose "SYSTEM" and press <MENU> to enter its sub-menu.
- 4) Choose "SYSTEM INFO", go to "APP UPDATE" and press <MENU> to get ready for system update.

#### SYSTEM INFO

APP VERSION	V3.0.0419-S5R16/1
APP UPDATE	UPDATE THE APPLICATION 

Are you sure to exit for upgrade?

**YES**

- 5) Press "YES" to exit the current program and continue with the upgrade.

## UPGRADE 1.1

Select a tar file for upgrade:	
Directory:	/media
<b>/Media/sdcard/S5R16_04194CnP.tar</b>	
/Media/sdcard/S5R16_04194EnP.tar	
<div>Are you sure to upgrade by this file</div> <div><div>YES</div><div>NO</div></div>	

Press key '<' or '>' to change directory

- 6) Choose the update file you have copied to hard disc. You can use "◀" and "▶" to select the right directory if there is more than one found. Press <MENU> to continue.

Select a tar file for upgrade:	
Directory:	/media
<b>/Media/sdcard/S5R16_04194CnP.tar</b>	
/Media/sdcard/S5R16_04194EnP.tar	
<div>Please waiting for updating...</div>	

Press key '<' or '>' to change directory

**NOTE: Do not turn off the power while updating!**

- 7) "Upgrade Success" will be shown up to remind you when update is successful, press <MENU> by remote to restart the application.



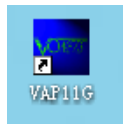
Select a tar file for upgrade:	
Directory:	/media
/Media/sdcard/S5R16_04194CnP.tar	
/Media/sdcard/S5R16_04194EnP.tar	
<div style="border: 1px solid black; padding: 10px; text-align: center;"> <div style="border: 1px solid black; background-color: #cccccc; padding: 5px; margin-bottom: 10px;">Upgrade Success</div> <div style="background-color: #4CAF50; color: white; padding: 5px 15px; display: inline-block;">OK</div> </div>	

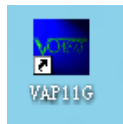
Press key ' < ' or ' > ' to change directory


### 5.23 Using Wi-Fi Module (Option)

- 1) Debug the Wi-Fi module on PC
- a) Connect Wi-Fi module to a PC's USB and LAN ports;
- b) Run "autorun.exe" included on CD with the Wi-Fi module. If the operation system of your PC is Win 7 or Vista, please choose Configure tools for WIN7/ VISTA; If the operation system is WinXP, please choose Configure tools for WINXP, then go with "NEXT" to finish the installation.





- c) After that, you will find  on your desktop. Double-click this icon to run the software, select your WiFi bridge from the list and click "Next":



## WIFI-Bridge Setup 5.0.16

### 1 Select WIFI-Bridge

**List of all WIFI-Bridge on Network** [Refresh List](#)

Select your WIFI-Bridge from the list and click Next.


Name	Mac Address
00-17-13-10-b6-4c	00-17-13-10-b6-4c

Click the Refresh list button to find WIFI-Bridges that have recently been added to the network.

[Back](#) [Next](#) [Exit](#)

802.11B/802.11G WIFI-Bridge **Setup Wizard** Model: **VAP11G**

- d) Select a wireless network to connect to:



## Choose a Wireless Network

### 2 Select a Wireless Network to connect to. If the wireless network is not found, please click [Refresh list](#), or enter the SSID of the network manually. Then, click [Next](#).

SSID	Mac Address	Channel	Signal	Security	Speed
ES_LINK_TENDA	c83a351affc8	6	80%	WEP (64...	54Mbps
TP-LINK_ES	001d0f492380	6	20%	Disable	54Mbps

[Refresh List](#)

☐ **SSID**  You can manually enter the SSID of the wireless network.

There are 2 wireless networks. [Back](#) [Next](#) [Exit](#)

802.11B/802.11G WIFI-Bridge **Setup Wizard** Model: **VAP11G**

For an example, if you select the "ES\_LINK\_TENDA" to connect to, press "Next", input the ascii code of your password in hex format. You can look up the ascii code of your password in the ascii table (Appendix A). For an example, if your password is "hello", you should input 68656c6c6f in "Key1", then press "Next" to finish.



## Security Settings

3

**Wired Equivalent Privacy (WEP)** is an encryption method used to secure your wireless network. If your network uses WEP encryption, then enter its WEP settings on this screen.

Security WEP (64bits) ▼

Select the level of WEP encryption used. A higher level of encryption means greater security. If your network is not using WEP encryption, keep the default setting, Disabled.

Key 1

Key 2

Key 3

Key 4

If you are manually entering the WEP key, enter 10 hexadecimal characters if you are using 64-bit WEP encryption. Enter 26 hexadecimal characters if you are using 128-bit WEP encryption. Valid hexadecimal characters are "A" through "F" and numbers "0" and "9."

Key Index Key1 ▼

Back Next Exit

802.11B/802.11G WIFI-Bridge

Setup Wizard

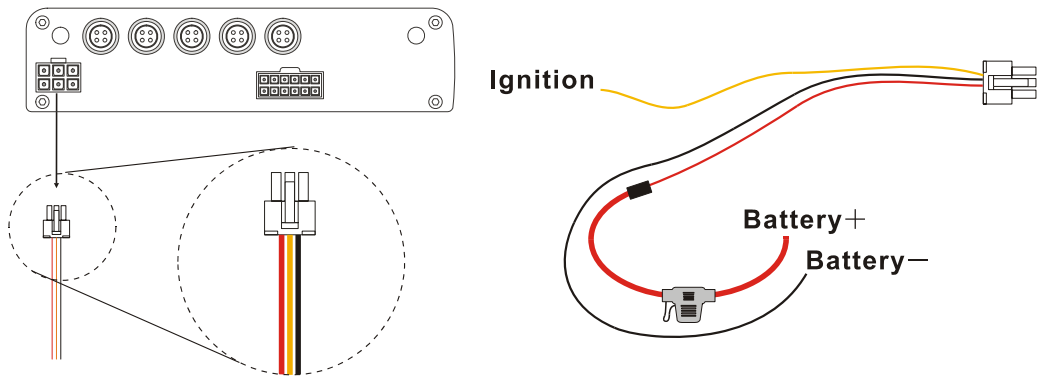
Model: VAP11G

- e) If now your PC could access to internet through this Wi-Fi module, it means the Wi-Fi module has been debugged well. You may remove the Wi-Fi module from your PC, and connect to DVR's USB and LAN ports, power on the DVR. Meanwhile, please find a PC within the same LAN, start to Ping the DVR, and see whether the DVR could be connected to the same wireless network or not. Note: After connecting the Wi-Fi module to DVR, normally it takes 6~7 minutes to ping through the PC. The defaulted IP address is 192.168.0.220 . If this is not with the same network segment of router, you're required to change the IP). If the DVR is ping through the computer, it means it is connected to the same wireless network, and you can control it on software.
- 2) Use the client software to control the DVR:
- Install supplier's reviewing software into your PC. You will get three icons of "ViewPro", "AVPlayer" and "Record Calculator" on your PC desktop. "ViewPro" is used for live view, file download, set DVR remotely, etc; "AVPlayer" is used for files playback.
  - Run the "ViewPro". User Name or Password is not required, just press "Enter" to log in.
  - The software will refresh automatically and add new DVRs into the "DVR List". If no DVR is found, please check the network connection and refresh the list manually. When a DVR is found, please double click to login in. By default, there is no password so you just click "Connect" to login to the DVR. You can see the live video by double click the "channel01" or other channels.
  - Right click the DVR and choose "setup", you can set the parameter of the DVR.
  - Click "Remote File List" and choose the date, you can see the file list on the hard disc.
  - Choose the file and right click, you can download the file.

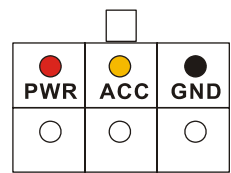


## 6. Connection & Installation Cables

### 6.1 Power Supply Cable



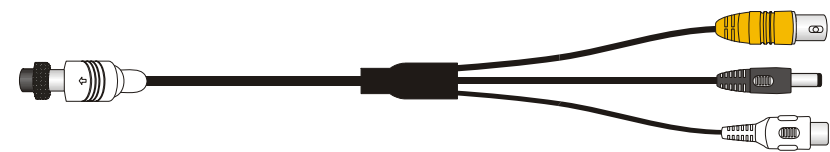
Viewed from crimp side:



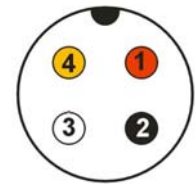
Mark	Color	Description
PWR	RED	"+" of power supply (you can connect to Battery "+")
ACC	YELLOW	Ignition signal. Connect this wire to "+" of power supply if you don't use ignition to control the power.
GND	BLACK	"-" of power supply (you can connect to Battery "-")

### 6.2 Video & Audio Input / Output Cable

#### 1) Video& Audio Input Cable

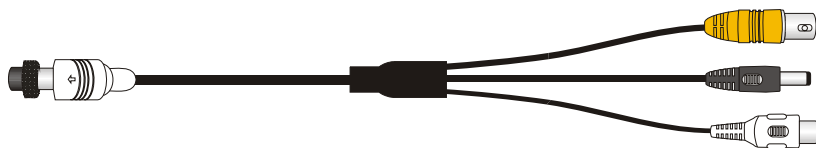


Viewed from crimp side:



Mark	Color	Description
VI(Pin4)	BNC Connector, in Yellow	Video input
AI(Pin3)	RCA Connector, in White	Audio input
12V(Pin1)	DC Connector, in Black	Power output for camera(+12 VDC, Maximum current 1A)
GND(Pin2)		Ground

#### 2) Video & Audio Output Cable:

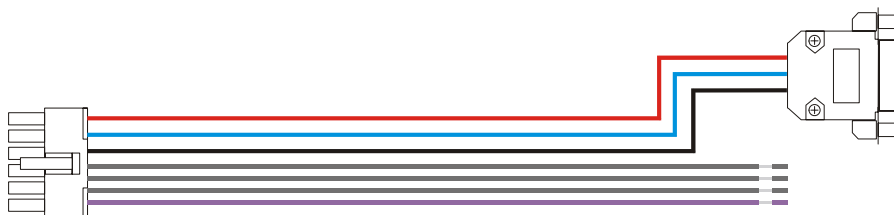


Viewed from crimp side:



Mark	Color	Description
VO(Pin4)	BNC Connector, in Yellow	Video output
AO(Pin3)	RCA Connector, in White	Audio output
12V(Pin1)	DC Connector, in Black	Power output for camera(+12 VDC, Maximum current 1A)
GND(Pin2)		Ground

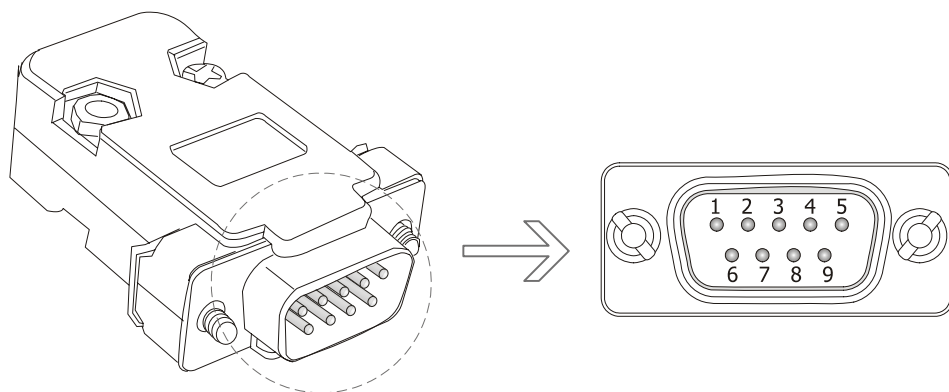
## 6.3 Sensor Harness



TXD1	TXD2	485A	5V	SNR2	SPEED
RXD1	RXD2	485B	GND	SNR3	SNR1

Pin No.	Description	Color	Description	GPS Connector
1	TXD1	Vacant	TXD, COM1, (GPS)	
2	TXD2	Vacant	TXD, COM2	
3	485A	Vacant	RS485 A, (PTZ)	
4	5.0V	Red	+5 VDC	Pin 9
5	SNR2	Grey	Sensor 2	
6	SPEED	Violet	Speed sensor	
7	RXD1	Vacant	RXD, COM1, (GPS)	
8	RXD2	Blue	RXD, COM2	Pin 3
9	485B	Vacant	RX485 B, (PTZ)	
10	GND	Black	Ground	Pin 5
11	SNR3	Grey	Sensor 3	
12	SNR1	Grey	Sensor 1	

### 3) GPS connector (RS232 COM1)



PIN	Description
3	RXD2: Data receive
5	GND: Ground
9	+5V DC: Power output

## 7. Specification

SPECIFICATION				
	ITEM	1CH MDR	2CH MDR	4CH MDR
VIDEO	VIDEO INPUT	1 channel	2 channels	4 channels
	VIDEO OUTPUT	1 channel, 1.0V, p-p, 75Ω, BNC		
	VIDEO FORMAT	Support PAL/NTSC		
	VIDEO COMPRESSION	H.264 High Profile		
	RECORD RESOLUTION	720x576(PAL)/ 720x480(NTSC)	1280x512(PAL)/ 1248x416(NTSC)	1280x1024(PAL)/ 1248x832(NTSC)
	FRAME RATE	25fps(D1 PAL) 30fps(D1 NTSC)	50fps(D1 PAL) 60fps(D1 NTSC)	100fps(D1 PAL) 120fps(D1 NTSC)
	VIDEO BITRATE	660Kbps ~ 1.5Mbps, 4 level video quality	1.32Mbps ~ 3Mbps, 4 level video quality	1.98Mbps ~ 4.5Mbps, 4 level video quality
AUDIO	AUDIO INPUT	1 channel	2 channels	4 channels
	AUDIO INPUT FORMAT	20KΩ, RCA		
	AUDIO OUTPUT	1 channel, 500Ω, RCA		
	AUDIO LEVEL	1V ~2V, p-p		
	AUDIO COMPRESSION	G.711		
STORAGE	STORAGE	Hard Disc, external USB device (memory stick or hard drive)		
	FILE FORMAT	AVI		
INTERFACE	SENSORS	1 speed sensor, 1 ignition sensor, 3 sensors for brake, return etc.		
	COM PORT	2 RS232 port, 1 RS485 port		
	NETWORK	RJ45, 10M/100M Ethernet		
	GPS	Support GPS receiver (optional), Synchronize the DVR system time with GPS automatically, can record GPS information along with video and audio. GPS data format: NEMA0183, Baudrate: 4800bps		
SOFTWARE	PLAYER	Specially designed player for the DVR		
	THIRD PARTY SOFTWARE	Windows Media Player(Ver 11.0 or above), VLC Media Player(Ver1.0.0 or above)		
POWER	INPUT POWER	From +8VDC to +32VDC		
	POWER OUTPUT	DC, +12V@1.5A, +5V@1A		
	POWER COMSUMPTION	Working power: <5W, Strand by power: 0.1W (exclude camera, Hard Disc, monitor)		
OTHER	WORK TEMPRETURE	From -30℃ ~ +60℃		
	SIZE	18cm X 18cm X 4.2cm (7.1 " x 7.1" x1.65")		
	WEIGHT	1.0 KG		
	PACKAGE SIZE AND WEIGHT	36cm X 26cm X 10cm (14.2" x 10.2" x 3.9"), 2.5KG		

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## 8. List of Standard Accessories

Item	Description	Quantity
1	Mobile HDD Video Recorder	1 pc
2	Removable HDD key	2 pcs
3	Removable HDD case	1 pc
4	Anti-vibration install unit	1 pc
5	AV input cable	1CH MDR: 1 pc 2CH MDR: 2 pcs 4CH MDR: 4 pcs
6	AV output cable	1 pc
7	Signal cables	1 pc
8	Power cable	1 pc
9	Remote Controller	1 pc
10	Fuse box	1 pc
11	1.5A fuse	2 pcs
12	Screws	4 pcs
13	User's Manual	1 pc

Options:

Item	Description	Quantity
1	External GPS Receiver	1 pc
2	Event Button & Cable	1 pc
3	Extension Cable (3m, 5m, 10m Option)	1CH MDR: 1 pc 2CH MDR: 2 pcs 4CH MDR: 4 pcs
4	2.5" Hard Disc (250GB or higher)	1pc
5	Removable HDD box	1pc
6	Hard Disc Reader	1pc
7	Water and Tamper proof box and 2 keys	1pc

---

## 9. Trouble Shooting.

**1. Q : After connecting the DVR power, no video output, the first and second indicators lights on panel flashing alternately.**

A: The No.1 and No.2 indicator light is "Power" and "Run". If the 2 indicators lights are flashing alternatively, the DVR missed the ignition signal, please check if the yellow line of the input power lines has connected with the power positive level, or if it's the same as the setting of the effective electrical level in menu settings. (The factory default settings set the high level effective, that is, it is effective when the yellow ignition signal line is connecting with the power positive level .)

**2. Q: As HDD's capacity limited, how to make the videos' time expand to meet the requirements of the customers?**

A: Reduce the video frame rate, video quality and record by Composite Mode.

1. Set the Channel Mode in the "Video Settings" menu to Composite Record (see 3.5);
- 2, Enter the "Video Parameters settings" menu, select a lower video quality, while reduce the frame rate to 12 frames / sec or less. Generally, it can expand the recording time to 4 to 10 times longer or more by using the above method.

**3. Q: when using the SD card, ScreenTip appears "read only error ".**

A: Please check if the SD card is write-protected, if so, please move the picks to the non - write protected.

**4. Q: What is a high level, what is low level?**

A: Generally, there are two electrical levels in the car, the power and the ground. Automotive power voltage with 12V and 24V, we generally call it high level, not the specific voltage value. Ground of Vehicle is the reference level, accurately is battery negative electrode. We generally call it low level. For cars with negative switch control (the main switch cut off the connection of the battery cathode and car chassis ground), the chassis ground connects to the battery anode through a certain resistance, the chassis ground is not a reference ground anymore. Please see the Appendix in the back, including the potential analysis diagram against cars with negative switch control.

**5. Q: Respectively, what's the voltage reference range of the high and low level in the DVR?**

A: The voltage range of low level is DC 0V~3V, the high level is DC6V~32V.

**6. Q: Why doesn't the DVR remote control work?**

A: Please make sure the battery in the remote control is still good, or try to change a new battery. And make sure aiming the remote control at infrared receptor window on the front panel of DVR.

**7. Q: SD cards or hard disc are OK, but the video recording doesn't work, what should I do?**

A: Please make sure if the default setting of Record Mode is changed from "Automatic" to "Off ", and whether to modify the DVR to scheduled record mode and the current time is not within the time period you set.

---

**8. Q: Do your Mobile HDD DVR support the capacity of 64G and above SDXC card?**

A: The HDD DVR does not support the capacities of 64G and above SDXC cards.

**9. Q: when the SD card inserted the DVR for recording, live images or playback visual will come to a frequent halt.**

A: Please make sure that if your SD card or USB's writing speed is enough. When the recording medium's writing speed is not enough, it will affect the continuity of live video and the real-time recorded video. Generally the SD card DVR can directly support two kinds of media:

1). SD card. With good writing speed and quality, there are Kingston, Transcent etc. brands on the market, It is more reliable for its conventional speed values of Class x and operation, it will not pause even with the highest record data rate on this machine. While other brands' SD card with the uneven quality and serious counterfeit, customers come to meet this problem usually, the fault disappears after replacing the SD card.

2). USB disk. Because of the cost sensitive reasons, most of USB disks sold on the market are the products of the USB1.1. Their speed can not meet the data rate of the requirements of the DVR. Please replace USB2.0 products for the faster speed.

**10. Q: Do internal real time clock of the DVR maintained by batteries? If so, how long will it last?**

A: Rechargeable batteries are used for DVR internal real time clock. If the battery is fully charged and DVR is completely disconnected from the power supply, internal real time clock can probably last for 1 month.

**11. Q: what do the 5 indicator lights representative on the panel of the DVR?**

A: The first and second green indicator lights on the panel:

Power indicator light ①	Running indicator light ②	Description
Light-on	Flashing	DVR on and running
Flashing alternately with running indicator light	Flashing alternately with power indicator light	No ignition signal, DVR off
Flashing simultaneously with running indicator light	Flashing simultaneously with power indicator light	Ignition signal disappears, DVR countdown running. After the time setting in the "ignition delay", DVR off automatically.
Flashing (slow flash)	Light-off	DVR off. At this point, press "Power" button on the remote control, DVR on.

The third red indicator light on the panel:

Alarm indicator light (red light) ③	Description
Light-on	DVR with alarm (such as over speed)
Light-off	DVR without alarm

---

The fourth red indicator light on the panel is HDD operation indicator light, this indicator light will shine timely when DVR recording or playing.

The fifth yellow indicator light on the panel is recording indicator light, if this light on, it means DVR is recording.

**12. Q: what kind of player software should use to play back video slots in HDD on the PC? Why some of them don't play normally?**

A: The Mobile DVR recording files is a standard AVI format, video stream compression standard is senior H. 264.

1. Mobile DVR has its own player software, including many special additional feature, such as playing continuously, fast forward playing, and other quickly locating recording and playing.

2. The recorded files also support general players. Such as VLC (version 1.0.0 and above, free open source software, can download from the internet), Media Player Classic(version 2009 Build: 3.9. above). Older Storm Audio can only support for video of 720x576 - resolution, when playing high resolution (1280x1024) recorded video file of Composite Mode, it can't display all the images, images on the right and below the video will be cut-off.

**13. Q: How to upgrade the Mobile DVR program?**

A: 1.Copy the update package (Suffix ".tar" files) to the root directory of HDD (or USB disk). Be careful not to extract.

2. Insert the HDD (USB disk) to DVR, after the machine detects the HDD, press menu to upgrade: **System settings -> system information** (version, upgrade etc.) **-> upgrade -> upgrade your current application -> select the upgrade file -> OK**

(Note: press the menu key to enter the next level of menu items. Normally you can complete the whole upgrade operation by using the menu key only.)

**14. Q: Does your DVR have RS485 control PTZ functions?**

A: For very few of car application using PTZ control, mobile DVR factory default is without the RS485 control PTZ functions. If you do need PTZ control function, please contact sales when ordering.

**15. Q: I bought the mobile DVR with PTZ control function, but it has no response after PTZ connecting.**

A: After you have confirmed your machine already has PTZ control function, you may test your control functions in accordance with the following:

1, Exchange the two lines of 485A and 485B, to see if they are connected wrong;  
2, Confirm if the PTZ Protocol is right;  
3, Confirm if the PTZ Address is right, our default is 1, trying to adjust to 0 or 2;  
generally the PTZ address code is 1. The address code needs to be changed when multiple PTZ devices connected. In addition, the address of each PTZ device cannot be duplicated, if you have 4 PTZ devices, you can respectively set them to address 1, address 2, address3 and address 4.

**16. Q: what is the difference of Separate Recording Mode and Composite Recording Mode?**

A : **Separate Recording Mode**, that is, the DVR compress each of front-end camera's image and audio separately, if it is a 4 - channel DVR, you will have 4 real-time D1 image AVI



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files, which is recorded on the HDD or USB disk at the same time.

**Composite Recording Mode**, that is, to composite multiple front-end camera images into a high - definition image (such as 1280x1024), and then compress the image with video encoder, at one point in time there has been only 1 high - definition AVI files recorded on HDD or USB disk.

Recording by Separate Mode can extract AVI file of each camera separately, but we can get recorded file of combination image with 4 cameras by Composite Mode.

The default recording mode of the Mobile DVR is the Composite recording Mode, its advantages are high-definition, storage space saving and convenient playing.

**17. Q: How long will my HDD of 250GB record?**

A: we have provided recording volume calculator software on the accessory CD, which can run on a PC. Or in the record settings of the host, select the different settings, such as quality, frame rate, it will show the total recording time of your current storage module below the screen. Generally speaking, recording time not only relates with picture quality, frame rate, but also relates with frequency of scenery changing in front of the camera lens. For some static image, the real recording time will be considerably longer than the calculated time.

**18. Q: Why can't I use VLC or other software to see the real time image through the network?**

A: The Mobile DVR turns off the network function by default, if you need network, please set the "Network" to "on" in the "Record - Video Parameters ".

**19. Q: Why is the bottom section of the screen with no image or video corruption?**

A: Firstly, make sure the DVR's video system and camera system are the same, for example, it will occur when the DVR settings is PAL system, while the camera is NTSC system. Conversely, if the DVR is set with NTSC system, scrolled fault images also occur when connecting a camera with PAL system.

**20. Q: when retrieving record files on the machine, only find the record files of channel 1, how to find the files of the other channels?**

A: Press the <left> or <right> keys on the remote control to switch other channels to retrieve record files. On the top right of the screen will display which channel the current file belongs to.

**21. Q: what is "Power OFF Delay"?**

A: Users who need to install DVR often want the DVR to record the images inside and outside the car for a while after the driver turn the engine off. That is, DVR cannot be turned off after engine is shutdown, it should be off after record continuously for the specified period of time. This time is called "Power OFF Delay" time, such as 30 seconds. You can set the time you need on "Car Settings – Power Off Delay ".

When the users who need "Power OFF Delay" function, the positive level of the DVR and the ground should be connected directly (through the fuse) to the cathode and anode of the car battery, at the same time attach car ignition signal line to the ACC of the car.

Of course, the time of "Power OFF Delay" cannot be set too long, because after the engine shutdown, mobile DVR entirely depend on the power of the car battery to work, we should prevent the vehicle can't start correctly next time if the mobile DVR drained the energy of the car battery.

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**22. Q: Why does DVR keep alarm when I set the motion detection, even if the image moving is not obvious?**

A: First, please make sure that if the sensitivity settings of the motion detection are correct, sensitivity is divided into 9 levels. The ninth level is the highest sensitivity; the first level is the lowest sensitivity.

Second, make sure that if your camera system (PAL system or NTSC system) match the stroboscopic lighting devices such as fluorescent lights. PAL system is 50Hz system, NTSC system is 60Hz system, and there are also two kinds of working frequency of power grid: 50Hz and 60Hz. if a PAL camera of 50Hz work under the fluorescent lights driven by the power grid of 60HZ, images will appear frequency difference flashing of 10Hz, this will led system to think scenery brightness is changing continuously, and motion detection alarm is based on the changes of scenery brightness to work, this will triggered motion detection alarm. Conversely, a false alarm will also occur when a camera of 60Hz works under the fluorescent lights driven by the power grid of 50HZ.

**23. Q: What does the indicator light mean on the wire control L35?**

A: The indicator light on the wire control is double color light, red and green. See the following form for their state.

<b>State of green light</b>	<b>meaning</b>	<b>State of green light</b>	<b>meaning</b>
One slow flash every three seconds	System start	Slow flash every three seconds	Communication of wire control is not normal
One flash every second	System is normal but no record	One flash every second	No memory device
lighting	System recording normal	lighting	No definition
One flash every 0.5 seconds	No definition	One flash every 0.5 seconds	System alarm indicator (the same as buzzer)